

The University of Chicago

URBAN LAND
USE ALONG MISSISSIPPI SOUND

A DISSERTATION SUBMITTED TO THE FACULTY
OF THE DIVISION OF THE PHYSICAL SCIENCES
IN CANDIDACY FOR THE DEGREE OF DOCTOR
OF PHILOSOPHY

DEPARTMENT OF GEOGRAPHY
MARCH, 1947

By
ROGER ANSON PRIOR

CHICAGO, ILLINOIS

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Roger A. Prior
Chicago, Illinois

February, 1947



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FOREWORD AND FINDINGS

The margin of Mississippi Sound, the island-bordered, intracoastal waterway that extends for 80 miles along the northern Gulf of Mexico from Lake Borgne, Louisiana to Mobile Bay, has the distinction of being the only segment of the Gulf Coast characterized by an alignment of closely spaced urban settlements.¹ From Waveland, which lies within five miles of Lake Borgne and 45 miles of New Orleans, to Ocean Springs, a distance of 40 miles, all of the Sound shore is urbanized and three-fourths of it lies within incorporated towns or villages (Figs. 1 and 9). Eighteen miles east of Ocean Springs, two other towns lie on the left bank of the mouth of the Pascagoula River. Of the 56,000 inhabitants living in these two urban areas, 53,000 reside in nine incorporated places² varying in size from about 800 to 17,500, and the remainder dwell in the intervening and adjacent unincorporated settlements that complete the built-up area and form integral parts of the overall urban pattern.

Although these Mississippi coast communities are on the transportational nexus between New Orleans and Mobile, are backed by the pinelands of the coastal plain, and face the clear waters of the Sound with its abundant fishery resources and resort potentialities, they exhibit a marked degree of functional individuality. The individuality is suggested by the fact that the towns vary in size, in age, and in rates of growth (Fig. 2 and Table 8).

¹In general, the pattern of urban settlement on the Gulf Coast from Florida to Texas features large cities at the major embayments (Tampa, Pensacola, Mobile, etc.) and very small widely spaced towns and villages facing directly upon the Gulf. The only exception is Galveston, Texas, a large city located on Galveston Island.

²The incorporated places are: Waveland (768) and Bay St. Louis (4,138) in Hancock County; Pass Christian (3,338), Long Beach (1,496), Gulfport (15,195), and Biloxi (17,475), in Harrison County; Ocean Springs (1,981), Pascagoula (5,900), and Moss Point (3,042) in Jackson County (Fig. 1). Population data from Sixteenth Census of the United States: 1940. Population, Vol. I (Washington: Government Printing Office, 1941), p. 571.

The communities at the west end of the strand are residential resorts; Gulfport is a railroad terminus, deep seaport, and trade center; Biloxi is supported by a combination of resort trade and seafood packing activities; while the two towns on the Pascagoula River always have been industrial communities.

It is because these towns represent a unit in the pattern of urban settlement along the Gulf Coast, and because, in the face of essentially similar conditions of site and situation, they have developed at different times and as functionally dissimilar communities, that they have been chosen for a geographic examination.

Regardless of functional variations nearly all phases of life in each town is in some degree associated with the water fronts as represented by the Sound, rivers, bays, and bayous. For the industries employing water transportation, water front location is essential; it is equally desirable for residential sites; and for resort and recreational use it has few peers. The role assumed by the water front and the tendency for various functions to compete for riparian space draws attention to the manner of land occupancy as being the most revealing aspect of urban development. In recognition of this fact, this study is posed in terms of land utilization. Facts of historical background, of functional interrelationships, of movements of goods and people, and of ties with the surrounding region are introduced and discussed only in so far as they aid in the interpretation of and contribute insight toward a better understanding of urban land use.

In view of the striking functional dissimilarities of this series of Gulf Coast towns, the characterization and explanation of urban land use, the primary objective of the dissertation, is presented in four parts, namely, (1) the Bay St. Louis-Pass Christian Section; (2) the Gulfport Section; (3) the Biloxi Section; and (4) the Moss Point-Pascagoula Section; Chapter I is an overview of the nature of the subject communities and of the factors bearing upon their development.

All map data and textual material are based upon field work accomplished during the early part of 1941. During the war years land use was drastically altered in three of the towns. The northwestern corner of Biloxi was converted from various communal uses into a U. S. Army Air Base. At Gulfport more than 800 acres

were added to the northeast corner of the city and used for an Air Forces training station, and a square mile at the western edge of the city was incorporated and utilized as a U. S. Navy supply depot and training station. At Pascagoula, Ingalls shipyard was expanded beyond the dimensions depicted on Figure 8, and employment increased from 1,100 in 1941 to about 11,000 during peak wartime production. None of these extensive changes is considered in this dissertation. Instead, the study is limited to a portrayal of land utilization as it appeared on the eve of the war and beginning of what may well prove to be the most significant half decade in the history of urban settlement along Mississippi Sound.

In view of the foregoing definition of the scope and nature of the problem, the following findings and conclusions appear to be justified:

1. The urban settlements occupy two parts of the Sound littoral, namely, (1) the strand that reaches from Clermont Harbor for 40 miles eastward to Ocean Springs, and (2) a two-mile strip at the east bank of the Pascagoula River (Fig. 1). Both segments are characterized by good drainage, and are served by the rail and highway transportation lines that connect Mobile and New Orleans. Intervening portions of the littoral are poorly drained and/or are not accessible to the highway or railroad.

2. Along the strand the built-up land is closely moulded to the shoreline and characterized by a thin ribbon-like string of occupancy forms between towns and nodal accretions around the town centers. This series of elongated, asymmetrical urban patterns is a response to: (1) good drainage of the beach ridge that parallels the shore, (2) the highway along the water's edge, (3) cool on-shore breezes in summer, and (4) a concrete seawall built for abatement of beach erosion.

3. The pattern of built-up land at Moss Point and Pascagoula is unlike that along the strand; Pascagoula is a rectangular-shaped settlement, and Moss Point is made up of four separate, ill-defined and discontinuous clusters of occupancy forms, none of which adhere closely to the banks of the Escatawpa River on the north or the Pascagoula River on the west (Fig. 8).

4. Although drainage channels and other slight, imperfectly drained depressions cause irregularities in the built-up patterns, in each town much land suitable for use is unoccupied.

5. The street systems of the urban settlements along Mississippi Sound feature two basic layouts: (1) checkerboard patterns oriented with the north-south and east-west lines of the county and township grid surveys, and (2) French and Spanish land grant pattern characterized by narrow, closely spaced, parallel streets running perpendicular to the shoreline. The former is best represented in Gulfport, a young, planned city with exceptionally broad easements; the latter is characteristic of the old towns like Biloxi, Bay St. Louis, and Pass Christian which were settled first by French colonists.

6. Except as in central Biloxi where the parallel streets are very closely spaced causing lots to be shallow, there appears to be almost no difference in the intensity of land use in either of the two prevailing street patterns.

7. The amount of land in commercial use in the several towns varies roughly with the population, but it is also affected by importance of rural trade, which in turn, depends upon accessibility of the towns to rural farm areas and whether or not the towns are seats of county administration.

8. Gulfport, the youngest town along the Sound, has become the chief trade center and has the most varied collection of retail service, and wholesale outlets. This commercial primacy grows out of (1) its function as a seaport, (2) services performed as seat of Harrison County government, (3) location at the coastal end of U. S. 49 and only federal highway reaching the Sound from the interior, (4) its function as terminus of the Illinois Central railroad, and (5) location midway between New Orleans and Mobile and to a high degree outside the overshadowing influence of either of the larger cities.

9. The wholesale function is limited to the larger four towns (Biloxi, Gulfport, Pascagoula, and Bay St. Louis), and with exception of the meat and paper dealers in Gulfport, is confined to distribution of such universally used commodities as groceries, oil and gas, and beverages.

10. Location of the commercial core in each town is related either to the main highway intersection or the railroad depot. In the older towns that antedate the railroad the commercial cores are at the main highway intersections; in the newer towns that have originated since 1870 when the Louisville and Nashville line was extended along the Sound from Mobile to New Orleans, the com-

mercial cores are associated with the railroad stations. Thus, Biloxi, Pass Christian, Ocean Springs, and Bay St. Louis are of the first type (Figs. 3, 4, 6, and 7); and Gulfport, Long Beach, and Pascagoula are best examples of the second type (Figs. 5 and 8).

11. The tendency toward localization of functions within the commercial cores is most pronounced in the larger towns and does not extend beyond a three-way segregation of (1) wholesale, storage and heavy goods enterprises, (2) high intensity retail and service establishments, and (3) tourist-commercial establishments. Such segregation is best illustrated in Biloxi where wholesale and heavy goods distributors are located near the railroad, the retail section is on West Howard Avenue, and the tourist-commercial firms are concentrated along the beach roadway (Figs. 6 and 12).

12. Land occupied by tourist-commercial enterprises is concentrated in but not limited to the segment of U. S. 90 between Long Beach and Ocean Springs (Figs. 5, 6, and 7). Within this 25-mile zone, 40 tourist courts, 14 hotels and many tourist homes provide accommodations for transients, and winter and summer vacationists. The largest group of these facilities is in Biloxi which by nature of its unique pattern, fishing fleet, many points of historical interest, and reasonably good beach--all extensively advertised--long has been a summer and winter resort of considerable renown.

13. Resort facilities are a response to (1) the tempering on-shore summer breezes that reduce the diurnal temperature range and eliminate heat waves, and (2) the fact that the Sound margin is the seashore nearest to New Orleans and other large urban centers in the Mississippi valley. That resort facilities are not more numerous appears to be due in large part to (1) low actual and sensible mid-winter temperatures that occasionally drop to near freezing levels, and (2) shore-wise currents that continually erode the beach thereby reducing the attractiveness of the water front for bathing and necessitate maintenance of artificial beaches.

14. The winter tourist season is limited to about two and a half months beginning in February when temperatures rise above the mid-winter lows, and Midwesterners are on route home from Florida. A few fashionable hotels specialize in this late

winter trade catering especially to wealthy golf-playing Northerners.

15. Practically all tourist courts have been erected since 1928 and are a response to heavy tourist and other traffic on U. S. 90, a transcontinental highway, linking Jacksonville to Los Angeles (via U. S. 80) and also the growing demand by middle class travelers and vacationists for convenient and economical accommodations. Most of the courts are located on U. S. 90 where it is coincident with the shoreline so as to profit by vacation as well as transient trade.

16. Distribution of the 40 tourist courts along the highway exhibits a measure of localization which has been effected by the influence of one or more of the following considerations, namely, (1) a desire to be in or near the larger towns; (2) nearness to restaurants; (3) condition of the beach; and (4) availability of land. These localizing forces have been counteracted to some extent by presence of many courts that are small scale, part-time enterprises whose locations are governed only by the fact that their owners had space available and capital to invest in tourist accommodations. Such courts are distributed along the shore in a random pattern.

17. Prominence of the coast as a summer resort for Southerners is revealed in the analysis of the trade of a representative tourist court which shows that during June, July, and August the number of registrants is about four times greater than in mid-winter, and that the majority of summer guests come from nearby southern states with Louisiana and Mississippi the leading sources. In winter, southern trade drops sharply and trade from the Midwest rises a little so that in the cool season most of the registrants originate from points north of the Ohio River (Figs. 10 and 11).

18. Land used for industrial purposes is almost entirely confined to four towns--Biloxi, Gulfport, Moss Point, and Pascagoula.

19. In Biloxi, except for a few establishments like the dairy, bottling works, planing mills, and ice plants which serve the local market, all industry is restricted to oyster and shrimp canning factories and ancillary boatyards and shell grit mills. Seafood packing developed after the railroad was built in 1870 in response to (1) abundant shellfish resources in the Sound and

Gulf waters, (2) sheltered sites in lee of Deer Island and in Back Bay for factories and boat docks, and (3) the growing national market for canned shellfish (Fig. 6).

20. Although industry in Biloxi uses only 1.1 per cent of the area of the city, all phases of the fishing business support about half of the local population (Tables 1 and 7).

21. Industry in Gulfport is represented by two large concerns located along the Illinois Central railroad in the northern part of town, and by several small factories producing goods for the local market. One of the large plants employs female labor to fabricate shirts from imported cotton cloth; the other uses imported fertilizer ingredients to produce commercial fertilizers.

22. Industrial development at Moss Point and Pascagoula has been an outgrowth of advantages resulting from (1) strategic location near the lower end of a large river system and natural collecting point for timber resources, (2) ample harbor facilities along the lower Escatawpa and Pascagoula Rivers, (3) accessibility to the Sound and Gulf fisheries, and (4) a ship channel dredged across the Sound to the deep waters of the Gulf. These features have enabled the dual-community to attract a number of factories that together produce a wider variety of goods than is possible at either Biloxi or Gulfport.

23. Fifteen factories varying in size from one to 80 acres, and employing from ten to 1,100 workmen, use local and imported raw materials to turn out a highly contrasted assortment of commodities including paper, woolen outerwear, wood products, fish cake and oil, lumber, wooden boats, and steel ships.

24. Moss Point developed as a sawmill town in the 1880's and Pascagoula served as the lumber shipping point; both towns thrived until about 1910 when the majority of the pinelands had been stripped of all merchantable species. Since that time both towns have been hard pressed to maintain their economies, and all effort has been exerted to procure industries to replace the sawmills. The timely introduction of the paper mill in 1910 and a brief but prosperous period of boat-building during World War I saved Moss Point from becoming a "ghost" town.

25. Production of plywood, veneers, duck decoys, and hardwood cores for paper rolls epitomize the shift that has taken place in the past 30 years from exploitation of pine to the util-

ization of the hardwood species like ash, cypress, gum, and bay that abound in the broad bottomlands of the Pascagoula River and its major tributaries.

26. In large measure the present diversity of industry is of recent origin. The knitting mill, plywood factory, fish oil extraction plant, and Ingalls shipyard all have been introduced since 1937, and each was established partially as a result of tax exemptions granted under the Industrial Act of 1936, a legislative measure designed to attract factories to the state and assure a more complete utilization of local raw materials and labor resources.

27. The port at Gulfport and key structure in the development of the town was built at the turn of the century as part of the Gulf and Ship Island Railroad Company's plan to provide a means to extract and export lumber from south central Mississippi. Besides the railroad and Anchorage Basin built at the edge of the townsite, the plan included a ship channel across the Sound to the deep waters of the Gulf beyond Ship Island (Fig. 1).

28. From 1901 to 1930 the port of Gulfport subsisted on exports of lumber. Since 1930 and with a sharp decline in lumber trade, the port has been enlarged and several storage sheds and warehouses built with a view to broadening the commodity base and lessening dependence upon lumber trade. Cotton storage facilities include two large new warehouses and a high density compress-- both located on the mainland (Fig. 5).

29. Largely due to the high value of beach sites for residential purposes, sufficient variation in quality of dwellings exists among the towns along the Sound to warrant recognition of five classes of residential property. The distinctions are based mainly upon size and upkeep of structures and in lesser degree upon age and lot sizes.

30. The amount of land in the five classes of residences varies greatly from town to town depending primarily upon the functional character of the place and to some extent upon size of the place. Residential towns like Waveland and Pass Christian have a high proportion of dwellings of above average caliber, whereas in industrial centers like Pascagoula and Moss Point superior dwellings are rare. In small towns such as Long Beach and Ocean Springs, the proportion of superior residences is lower than in Biloxi or Gulfport, functional character notwithstanding.

31. Regardless of size or functional nature of the community the above-average dwellings tend to dominate choice residential sites. With but a few exceptions in Pascagoula, all Class I (superior) residences occupy parcels facing the beach (Table 10 and Figs. 3-8). Class II residences, which are much more numerous, occupy the bulk of the beach lots not taken up by Class I, and in the larger towns, are also common on second-line property. In Gulfport and Biloxi at least one large subdivision north of the Louisville and Nashville right-of-way is characterized by dwellings of Class II caliber.

32. Distribution of Class III residences is subject to wide variation. They tend to be commonest near the commercial cores, and, in some towns (Long Beach, Bay St. Louis, and Ocean Springs) they are fairly numerous on the beach. Otherwise, middle-class dwellings are widely dispersed in all parts of the urban and interurban areas.

33. Dwellings of below average quality are found in most parts of all towns except along the beach. Class IV properties, in general, are the standard type for industrial workers, and are especially common in (1) the shipyard district in Pascagoula, (2) the paper mill area in Moss Point, (3) the garment factory district of Gulfport, and (4) the East End and Back Bay seafood packing neighborhoods in Biloxi.

34. The small, cheaply constructed, old and dilapidated shacks representative of Class V dwellings are not so numerous nor widely scattered in most towns as are Class IV types. They are predominant in the Negro quarters, and are thus most numerous in communities that have relatively large Negro populations such as Pass Christian and Moss Point, and rare in Long Beach and Waveland.

35. Establishment of Ingalls Shipyard in Pascagoula necessitated construction of a housing project with a capacity for about 3,000 inhabitants, or about 50 per cent of the population of the town in 1940 (Fig. 8). In Biloxi the substandard quality of a high proportion of dwellings enabled local authorities to procure three low-rent housing projects through the United States Housing Authority. When completed these brick apartment buildings will replace a high proportion of the Class IV and Class V dwellings in the East End and Back Bay residential districts (Fig. 6). With exception of a number of summer cottages built in Waveland

since 1936, these two projects are the only significant alterations in the residential patterns of towns along the Sound in more than a decade.

36. As the seaboard communities nearest to New Orleans, a large urban center with a big demand for summer vacation facilities, the towns near the western end of the Sound have developed during the last century as residential summer resorts, and a high proportion of all beach property is occupied by summer homes. In Pass Christian, Bay St. Louis, and Waveland, 61, 42, and 65 per cent, respectively, of all beach property is in seasonal use and the majority of it is owned by New Orleanians. In Waveland and Clermont Harbor practically all dwellings back from the beach are also summer residences, many of them built recently by New Orleanians in the middle income groups.

37. Apart from the fact that most summer homes are in good repair and none fall in Class V and very few in Class IV, they do not vary in size or general appearance from permanent residences of average and above average quality.

38. Prominence of land in communal use, which includes all governmental, institutional and recreational functions, is due to presence of several installations of an extra-local nature. Most of the space so used is located along the strand between Long Beach and Biloxi (Figs. 5 and 6), where large parcels of land unsuited for agriculture and unwanted for residential or other urban purposes, are admirably adapted and well located for use as golf courses, veterans facilities, and colleges.

39. Four of the five 18-hole golf courses along the Sound are located between Mississippi City and Ocean Springs. Three of them were built as hotel adjuncts to attract tourists; the fourth, although used by tourists, is supported chiefly by local patronage.

40. Land used by local governmental agencies, churches, schools, and cemeteries represents a very small proportion of the total land surface. School properties are the largest and churches the most numerous. In the older towns like Bay St. Louis and Biloxi, where instruction for years was handled only by parochial institutions, schools exist in greater numbers than they do in the younger towns that have always depended primarily upon public instruction.

41. In view of the prominence of beaches and natural em-

phasis upon water sports, the small towns along the Sound provide little or no space for public parks. In the larger communities, public parks occupy some land and with few exceptions the parcels face the water front which is the most unique and valuable recreational resource of any town, despite the seawall and necessity of maintaining artificial beaches.

42. In light of changes effectuated during the 1930's and disregarding recent alterations in the local urban economies stemming from wartime activities, there is little reason to expect notable expansion or revision in the manner of land use in the coast towns in the near future. The resort industry appears to be near the saturation point in line of tourist accommodations. With the best residential sites already improved there is no indication that the residential resort towns will do more than maintain the slow growth that has prevailed for the past several decades. The seafood and forestry industries appear to be as well developed as the resources warrant. The shipbuilding industry, although not primarily a wartime endeavor, and subject in peacetime to the vagaries of the national and international market, is not the type of pursuit that can expect to operate continuously on a large scale. The garment factories, while introduced through special financial privileges, bid fair to remain permanent elements of urban support. Regardless of recent port improvements at Gulfport, it is difficult to envisage corresponding improvements in the shipping business; and even if cotton exporting becomes well established, which is unlikely, it alone can do little to further urban expansion. A prosperous tung tree culture or other surplus-yielding farm economy in the coast counties would greatly benefit the towns along the Sound, but failing that, the semi-subsistence and part-time agriculture presently obtaining, will continue to lean upon the coastal settlements as the major market and contribute little toward their commercial growth.

43. In conclusion it should be remembered that one of the outstanding characteristics of the Gulf coastal area is "liveability." Though its net worth defies accurate assessment, it is an asset of high order that should not be discounted or taken for granted in planning for the future. As the atomic age with its accompanying threat of a "push-button" existence attains maturity, forcing further decentralization of industry and accentuating the problem of use of leisure, "liveability" of areas will doubtlessly

become a strong instead of an incidental factor in localization of industry and in distribution of population. Agreeable temperatures, pleasant scenery, and recreational resources coupled with low-cost living are assets of incalculable value that may in time provide the underlying stimulus for all expansion or revision in urban land use along Mississippi Sound.

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CHAPTER I

THE NATURE OF THE URBAN AREAS

The southern littoral of Mississippi and line of contact between the thinly populated, pine-clad low terraces of the coastal plain and clear waters of Mississippi Sound is the scene of one of the major urban developments in Mississippi and the only alignment of closely spaced towns and villages along the Gulf Coast. The urban pattern consists of nine towns and villages, which vary in size from 768 to 17,475, and a number of unincorporated hamlets which together represent about 56,000 people. Seven of the incorporated places (Waveland, Bay St. Louis, Pass Christian, Long Beach, Gulfport, Biloxi, and Ocean Springs) are arranged in an almost continuous linear pattern at the edge of the smooth strand that reaches from south central Hancock County for 40 miles eastward across Harrison County to the southwestern corner of Jackson County (Fig. 1). The two other incorporated towns, Pascagoula and Moss Point are located at the east side of the Pascagoula River between its mouth and the confluence with the Escatawpa River about seven miles upstream.

Occupational Structure of the Principal Towns

The nature of these towns may be expressed in numerous ways, but perhaps the most critical insight into their character may be gained through an examination of the occupational statistics. How people make their living, in final analysis, is the key to the functional nature of any community and a knowledge of functions is requisite to an understanding of the types and patterns of land use.

The percentages of gainfully employed in the major occupational groups for the six towns along the Sound with more than 2,500 inhabitants are shown in Table 1. Similar information for the places of less than 2,500 inhabitants is not available. Added to the data for the six towns are percentages for (1) Mississippi's urban population as a whole and (2) averages for five

TABLE 1

NUMBER AND PER CENT OF TOTAL ENGAGED IN MAJOR OCCUPATIONS
FOR SIX COAST TOWNS AND SELECTED OTHER CITIES IN
MISSISSIPPI, 1940^a

	Biloxi		Gulfport		Bay St. Louis ^b		Pass Christian	
	No.	%	No.	%	No.	%	No.	%
Agriculture.....	32	0.5	37	0.6	24	1.9	59	5.1
Forestry and fishing ^d	87	1.5	25	0.4	35	2.8	101	8.7
Construction.....	240	4.1	373	6.5	102	8.2	98	8.4
Logging, Saw and Plan. Mills.....	22	0.4	13	0.2	11	0.9	4	0.3
Manufacturing.....	2,406	40.9	954	16.6	130	10.5	179	15.3
Wholesale Trade.....	127	2.2	180	3.1	29	2.3	9	0.8
Retail Trade.....	915	15.5	954	16.6	204	16.4	159	13.6
Personal and Other Services.....	1,066	18.1	1,475	26.2	319	25.8	376	32.2
Domestics .. ^e		6.4		11.2		14.4		21.8
Hotels, etc.		4.3		4.5		2.6		3.5.
Transportation, Communication, and Utilities.....	201	3.4	648	11.5	109	8.8	47	4.0
Professional Services.....	470	8.0	679	11.8	197	15.1	79	6.8
Government.....	233	4.0	299	5.3	46	3.7	32	2.7
Total Employed.....	5,887		5,728		1,240		1,168	
Per Cent of Total Population Employed.....		33.7		38.5		30.1		34.7

^aCompiled from Sixteenth Census of the United States: 1940. Population, Vol. II, Part 4 (Washington: Government Printing Office, 1942), pp. 228, 304-5.

^bColumbus, Clarksdale, Greenville, Greenwood, and Natchez, Mississippi.

^cData for Bay St. Louis, Pass Christian, Pascagoula, and Moss Point extracted from files of Bureau of Census, courtesy of Mr. J. C. Capt, Director.

^dData for mining are omitted.

^eDomestics and workers in hotels and lodging places are sub-categories included in Personal Services.

TABLE 1--Continued

Pascagoula		Moss Point		State Urban Population	Average for Five Towns from 10 to 20,000 ^b
No.	%	No.	%	%	%
12	0.6	10	0.8	1.8	2.8
24	1.3	2	0.1	0.3	0.1
98	4.6	34	2.8	6.3	7.6
56	2.6	83	6.9	4.3	4.4
966	45.5	564	46.9	18.9	11.5
29	1.4	9	0.7	3.5	4.0
250	11.7	115	9.6	17.1	18.0
327	15.2	239	19.9	28.4	32.4
	7.4		13.8	17.4	21.1
	1.6		1.4	2.2	1.8
114	5.4	49	4.1	8.2	6.5
104	4.9	68	5.6	8.4	7.7
117	5.5	20	1.7	4.3	2.9
2,123		1,206		....	....
	36.1		39.9	38.6	39.7

other towns in the state with between 10,000 and 20,000 population. These data are supplied to enable comparison and to ascertain ways in which the coast communities, especially Gulfport and Biloxi, are alike or unlike other towns in Mississippi in terms of occupation structure.

At the outset it should be noted that the proportion of total population gainfully employed in most of the coastal towns is low. Only Gulfport and Moss Point have employment ratios equal to or greater than the state's total urban population or the average of five other Mississippi cities. The low employment figures are not readily explained, but they indicate (1) that some of the coastal towns are inhabited by many retired people, and (2) the local conditions of employment at time of census enumeration.

Manufacturing is the main function in three of the coast towns. In Moss Point, Pascagoula, and Biloxi, 47, 45, and 41 per cent, respectively, of all gainfully employed work in manufacturing establishments. These proportions are much larger than the average for the five inland cities and over twice as large as the percentage for the state's urban population. The dominance of manufacturing in Moss Point and Pascagoula is even greater if persons employed in saw and planing mills are combined with other types of manufacturing. It is noteworthy that only Moss Point and Pascagoula have an appreciable number of employees engaged in "logging, saw and planing mills." Very few of these are active in logging. In all other towns the number in this category is negligible and reflects the fact that most of the places along the Sound have little functional liaison with the lumbering industry on the coastal plain.

Biloxi's manufacturing is almost entirely confined to one class of production. Ninety per cent of the employees in this occupation group are in "food and kindred products," i. e., seafood processing. In Pascagoula, 65 per cent of the factory workers are in "transportation equipment except automobiles," i. e., ship- and boatbuilding. The bulk of the remainder are in "paper and allied products" (17 per cent) and "textiles" (10 per cent). For Moss Point the percentages are reversed. Fifty-nine per cent of the factory workers are engaged in paper production; 24 per cent in textiles manufacture; and 10 per cent in shipbuilding.

In the other towns manufacturing does not bulk large in terms of numbers employed. At Gulfport, one garment factory employing women largely, accounts for over 60 per cent of the persons engaged in manufacturing. Bay St. Louis and Pass Christian each have one seafood cannery that engages over 80 per cent of all factory hands enumerated in each town.

Construction activities are commonly lumped with manufacturing in functional classification of occupations, but inasmuch as construction is a necessary element in the occupational structure of all towns, it is not a suitable criterion for gauging industrial character. Therefore, in Table 1 construction activities are shown separately. It will be seen that the percentages vary considerably. The only plausible explanation as to why Moss Point should have only 2.8 of all gainfully employed in this category, whereas Bay St. Louis has over 8 per cent, is the fact that construction activities are mobile endeavors that may serve more than one area. Where towns are closely spaced, as they are along the Sound, there is no reason to expect that all percentages should be about the same.

In terms of the occupational structure the relative importance of the trade function is much less apparent than in the case of manufacturing. The percentages for retail and wholesale trade for all towns along the coast are lower than the average for the state's urban population or for the five interior cities, a fact that tends to mirror the coastal position at the edge of the relatively unproductive and sparsely settled coastal plain.

Judging from occupational data alone one would conclude that Gulfport and Biloxi are of about equal importance as commercial centers. Gulfport has 954 persons engaged in retail trade and 180 in wholesaling as compared to 915 and 127, respectively, for Biloxi. This slight superiority for Gulfport fails to indicate that it is a much more important business town than Biloxi.

Neither is the true picture represented by the number of retail outlets (Table 2). The importance of number of establishments should be discounted, however, because the discrepancy in favor of Biloxi can be traced to the fact that it has 100 eating and drinking places, whereas Gulfport, which has an ordinance prohibiting sale of liquors, has less than 40.

Relative importance of the trade function is best expressed in terms of total sales and sales volume per capita

TABLE 2

RETAIL TRADE FOR SIX COAST TOWNS^a

Town	Total Stores	Total Sales (000 Omitted)	Sales Volume Per Capita ^b
Biloxi.....	279	4,164	\$236
Gulfport.....	234	5,674	368
Pascagoula.....	92	1,396	237
Bay St. Louis.....	76	976	235
Moss Point.....	46	594	198
Pass Christian....	43	420	126

^aSixteenth Census of the United States: 1940. Census of Business, 1939, Vol. I, Part 3 (Washington: Government Printing Office, 1941), pp. 245, 609.

^bComputed.

(Table 2). Despite the fact that Gulfport has fewer retail establishments than Biloxi, its firms do a considerably larger business as is evident by the great differential in sales per capita. Gulfport's leadership in trade is even more pronounced in wholesaling, as is clearly shown by Table 3. In like manner

TABLE 3

WHOLESALE TRADE FOR THREE COAST TOWNS^a

Town	Number of Establishments	Total Sales (000 Omitted)	Sales Volume Per Capita ^b
Gulfport.....	34	4,388	279
Biloxi.....	18	2,512	144
Pascagoula ^c	7	521	89

^aSixteenth Census of the United States: 1940. Census of Business, 1939, Vol. II (Washington: Government Printing Office, 1942), p. 891.

^bComputed.

^cWholesale trade statistics not published for towns with less than 5,000 inhabitants.

Gulfport dominates service establishments business with receipts per capita amounting to \$49 as compared to \$17 for Biloxi. For the smaller towns receipts in this line of trade are from \$10 to \$13 per capita.¹ Total trade per capita for the six towns along the Sound is as follows: Gulfport, \$713; Biloxi, \$400; Pascagoula, \$338; Bay St. Louis, \$248; Moss Point, \$204; and Pass Christian, \$138. Gulfport, therefore, is the only town that can qualify as an important trade center in terms of sales.²

The superiority of Gulfport over Biloxi in trade is due mainly to a positional advantage. Gulfport is centrally located along the coast and has the best inland connections to the immediate interior. The importance of road connections is not now as significant as it once was. And to a degree Gulfport's current commercial supremacy is a carry-over from the period before bridges across Back Bay gave Biloxi easy access to the north and east. It is also a carry-over from the pre-automobile age when Gulfport's rail line connection provided a temporary advantage in drawing business from the interior. This carry-over, translated into prestige, reputation, and momentum has become a strong factor in Gulfport's business life.³

The proportions of gainfully employed in personal and

¹Computed from Sixteenth Census of the United States: 1940. Census of Business, 1939, Vol. III. Service Establishments (Washington: Government Printing Office), p. 223.

²In a system of functional classification of cities devised by Kneedler in which employment data supplemented by occupational data are used to measure importance of various activities, Gulfport is classified as a "diversified" type of town with retail trade predominant and manufacturing of moderate importance. In the same system Biloxi is classified as a manufacturing town with trade of minor importance. G. M. Kneedler, "Economic Classification of Cities," Municipal Yearbook, 1945 (Chicago: International City Managers Association), p. 30. Also see, C. D. Harris, "A Functional Classification of Cities in the United States," The Geographical Review, XXXIII, No. 1 (1943), pp. 86-99.

³Development of Gulfport, and to a lesser extent growth of the other towns along the Sound, illustrates the three theories of urban causation discussed by Harris and Ullman. All towns (except Moss Point) have profited by the localizing influence of the beach and are specialized-function places. Gulfport with its rail connections and port is a transport city, and because of mid-position within the population pattern of the coastal area, it is also a central place. See, C. D. Harris and E. L. Ullman, "The Nature of Cities," The Annals of the American Academy of Political and Social Science, Vol. CCXLII (November, 1945), pp. 7-12.

other services vary greatly among the coast communities. In Pascagoula this category of workers is less than half as important as it is in Pass Christian. In Biloxi it is also small compared with Gulfport, the state's urban population as a whole, or with the average for the interior cities. These variations are due mainly to the marked differences in numbers engaged in domestic service. Generally, throughout the urban South the number of domestics is large, a fact that may be attributed to the large Negro population. As will be shown later the Negro-white ratio is low in Biloxi and Pascagoula and high in Pass Christian and Moss Point. The high percentage of domestics in the two latter towns as compared to the two former places would seem to indicate a high positive correlation between ratio of Negroes and number of household servants. To some extent, the low percentage of domestics in Biloxi may be ascribed to the large poorly paid seafood working population which in all probability does not employ household help.

Employment in "hotels and lodging places" is not large in the six coast towns, but the variation between places is pronounced. Biloxi and Gulfport have a higher percentage of their employed inhabitants working in hotels and lodging places than is true of any other urban place in the state including Jackson, the capitol. This is the only statistic among those relating to occupations that definitely reflects tourism or the resort function. Pass Christian also has a high percentage employed in this category, as does Bay St. Louis. In Pascagoula and Moss Point, where the resort function is nil, persons employed in hotels and tourist camps are few.

In the Kneedler system of economic classification¹ Biloxi and Gulfport do not qualify as "resort and health centers" because (1) manufacturing in both cases is greater than 15 per cent of aggregate number employed and (2) less than 10 per cent of the gainfully employed work in hotels and lodging places, eating and drinking establishments, and places of amusement and recreation.²

¹Kneedler, op. cit.

²Both towns come close to satisfying this criterion. These three types of establishments employ 9.84 and 9.40 per cent of the gainfully employed in Biloxi and Gulfport, respectively.

This latter characteristic applies particularly to places that are seasonal resorts, and where the number of employees tends to be high in the peak of the season and low in the slack season. Census data are collected during April and therefore minimize the occupational characteristics of places that are either summer or winter resorts. To some extent, moreover, workers in seasonal resorts are transients who follow the trade as it moves from one part of the country to another. These transients more than likely are not included in the census of occupations, and, therefore, the percentage of persons engaged by resort establishments is slightly lower than it actually is.

The group made up of transportation, communications and utilities represents 11.5 per cent of Gulfport's workers and reflects the city's importance as a railroad terminal, port, and area headquarters of the utility company that serves southern Mississippi. These functions make Gulfport relatively more outstanding as a communications center than most places in the state. In Biloxi, in contrast, none of these occupations is significant and most are well below average in importance. This fact attests to Biloxi's peninsular site and its long continued isolation by land routes from other places along the Sound. The isolation has been eliminated by the automobile and modern highways and bridges, but the effects remain to color the occupational structure.

Professional occupations are of more than average importance in Gulfport and Bay St. Louis. The explanation involves a number of factors. Both are seats of county government and have an attendant concentration of lawyers and abstractors. Gulfport, moreover, has a college on both its east and west margins. It also has the coast's only firm of accountants. Bay St. Louis, in turn, has two academies, and tends to attract professional people, lawyers, doctors, and the like because (1) it is the only large town in the county and (2) it performs professional services for neighboring Waveland as well. It should be noted that a high proportion of professional people in all places are women.

Government workers tend to be relatively more numerous in larger towns and county seats. Gulfport, with 5.3 per cent and Pascagoula with 5.5 per cent, are highest of the coast towns and both are above the average for the five cities and the state's urban population. To some extent, this reflects the concentration of federal government offices as well as county government work-

ers.

The relative importance of agricultural occupations is exceptionally low as compared to other cities in the state and is an indication that farming is not important in the vicinity of Biloxi, Gulfport, Pascagoula, and Moss Point. Pass Christian is a notable exception and if data were available for Long Beach, its percentage of agricultural workers would no doubt be fairly high. The only well developed agricultural area close by the Sound lies immediately north of Long Beach and not far from Pass Christian.

The place of forestry and fishing in the employment structure is anomalous. Despite importance of forestry in southern Mississippi, none of the coast towns have many residents engaged in that occupation. The percentages as shown on Table 1 are due entirely to fishing and even they are surprisingly low. The high percentage for Pass Christian (8.7) and low percentage for Biloxi (1.5) are contradictory, and result from the fact that all but 87 fishermen in Biloxi have been enumerated as seafood workers. In a sense this is logical, as a high proportion of the fishermen work for seafood factories, and the fishing industry is a function of the manufacturing plants rather than the reverse, but it does distort the employment structure from a functional viewpoint and gives manufacturing per se a stronger position than it deserves.¹

As already mentioned no occupational data are available for the three smaller places--Long Beach, Ocean Springs, and Waveland. Long Beach is a rural shopping center and resort town. Ocean Springs is similar and neither has any manufacturing. Waveland is purely a summer residential town with practically no commercial activity. In most respects it is merely a residential extension of Bay St. Louis.

In summary, then it can be seen from this brief discussion of the occupational data and other supplementary statistics, that although all towns along the Sound in a general way are under the influence of the same sorts of situational and site conditions,

¹In 1939 all manufacturers in Biloxi reported the yearly average number of employees as 1,433; this excludes all nonmanufacturing employees. Sixteenth Census of the United States: 1940. Manufactures, 1939, Vol. III (Washington: Government Printing Office, 1942), p. 535.

the conditions have not tended to produce the same sorts of urban economies. Biloxi, Pascagoula, and Moss Point are industrial centers with trade providing a relatively small measure of urban support. Gulfport, on the other hand, is mainly a trade and transportation center, with manufacturing of lesser significance. While Bay St. Louis and Pass Christian are residential towns in which neither manufacturing nor trade is prominent. We have seen also, that the resort function, which is so abundantly apparent in the landscape all the way from Waveland to Ocean Springs, is not apparent in the statistics. Regardless of lack of a suitable quantitative measure of this industry it is without doubt a major factor in all urban economies, except Moss Point and Pascagoula.

Population Characteristics

Just as the towns along the Sound are unlike other Mississippi towns in their occupational structure, they tend also to be different in population characteristics. The percentage of foreign-born is higher and the percentage of Negroes is lower than it is in most other parts of the state. The figures are shown in Table 4.

TABLE 4
POPULATION COMPOSITION IN 1940*

Towns	Percentage of Total Population	
	Negro	Foreign-born
Gulfport.....	21.9	1.7
Biloxi.....	14.8	2.6
Long Beach.....	11.6	2.5
Ocean Springs.....	28.8	2.4
Bay St. Louis.....	28.3	2.7
Pass Christian.....	34.9	1.7
Pascagoula.....	17.4	1.9
Moss Point.....	37.0	0.8

*Computed from: Sixteenth Census of the United States: 1940. Population, Vol. II, Part 4 (Washington: Government Printing Office, 1942), pp. 268, 296.

Throughout Mississippi the white population is notably pure Anglo-Saxon strain with very few foreign-born. Indeed, in many counties there are no foreign-born residents. Only in the three coast counties is the percentage of foreign-born in excess of one per cent of the total population and in each county the great majority of them dwell in the towns along the Sound.

The largest single nativity group are the Yugoslavs. Over a third of all foreign-born in Biloxi¹ are native of that country and nearly all of them are engaged in some phase of the seafood packing industry. Persons born in Italy and Austria also are numerous.

In Gulfport, the only other town for which data on country of birth are available, the leading three foreign-born nativity groups are Italian, Greek and German.² None of these groups is as large as the Yugoslavian population in Biloxi. Presence of a foreign-born element in the towns along the coast is a reflection of the cosmopolitan cast of seaboard communities in general, particularly those that function as ports. Many of the foreign-born have arrived on the coast of Mississippi via New Orleans.

It is noteworthy that although all the coast was settled by the French, and for a time in early history was under French and then Spanish jurisdiction, there is nothing in the present population composition to indicate it. The only carry-over from the earlier French and Spanish colonial days are the names--street names and names of families descendent from the early settlers--the plan of land subdivision (see p. 18), and the religion. A high proportion of the residents of the older towns--Pass Christian, Bay St. Louis and Biloxi--is Catholic, which is further evidence that the culture of the coast is different from the rest of the state, and more similar to that of neighboring Louisiana.

The variation in Negro population among the coast towns has been mentioned in the preceding section. Not only are there marked variations but the percentages are low. Negroes comprise 41.2 per cent of the total state urban population.³ All towns along the Sound have lower ratios. Small Negro populations are characteristic of the counties in southern Mississippi where

¹Sixteenth Census of the United States: 1940. Population, Vol. II, op. cit., p. 268.

²Ibid.

³Ibid., p. 206.

agriculture is a semi-subsistence owner-operated type of enterprise in which little farm labor is employed. In Hancock, Harrison, and Jackson counties only one person in five is Negro. When considered in light of that fact the low Negro-white ratios in the coast towns are not so striking. However, it is difficult to explain the sharp variations. The high ratio for Moss Point is pretty clearly due to the past employment of large numbers of Negroes in sawmill operations. The high ratio for Pass Christian, where most of the Negroes are employed as domestics, is less easily understood, unless they were brought in for that purpose. Long Beach has always been the center of an agricultural community which specialized in truck and fruit production and not the sort to attract much Negro labor except on a seasonal or transient basis. This fact may explain its low Negro population. In Biloxi, the small number of Negroes is probably due to the fact that the town has never supported an industry that employed Negro help and also to the fact that part of the city's population consists of poorly paid seafood workers who do not employ domestics.

Population Growth

Inasmuch as population growth generally mirrors the functional complex of communities, an examination of the growth curves helps further to illuminate the character of towns along the Sound. Population changes, expressed as on Figure 2, in terms of the four urban Sections, also emphasize the dissimilarity in economic structures of each group of towns. Thus the old residential towns--Bay St. Louis, Pass Christian, and Waveland--have grown slowly. With little or no industry and not much trade, population of the Bay St. Louis-Pass Christian Section has barely doubled in the last 50 years.

Biloxi, although the oldest settlement and site of the original French colony along the Gulf Coast, in 1870 ranked third in size among the communities along the Sound. It did not commence to expand rapidly until the Louisville and Nashville railroad was extended along the shore and the seafood packing industry began to flourish. At the outset, thereafter, the rate of growth was pronounced and subsequently continued at a decreasing rate of acceleration, but sufficient to maintain a position as principal town on the coast. Ocean Springs, the quiet, little residential resort and rural shopping center, has grown very

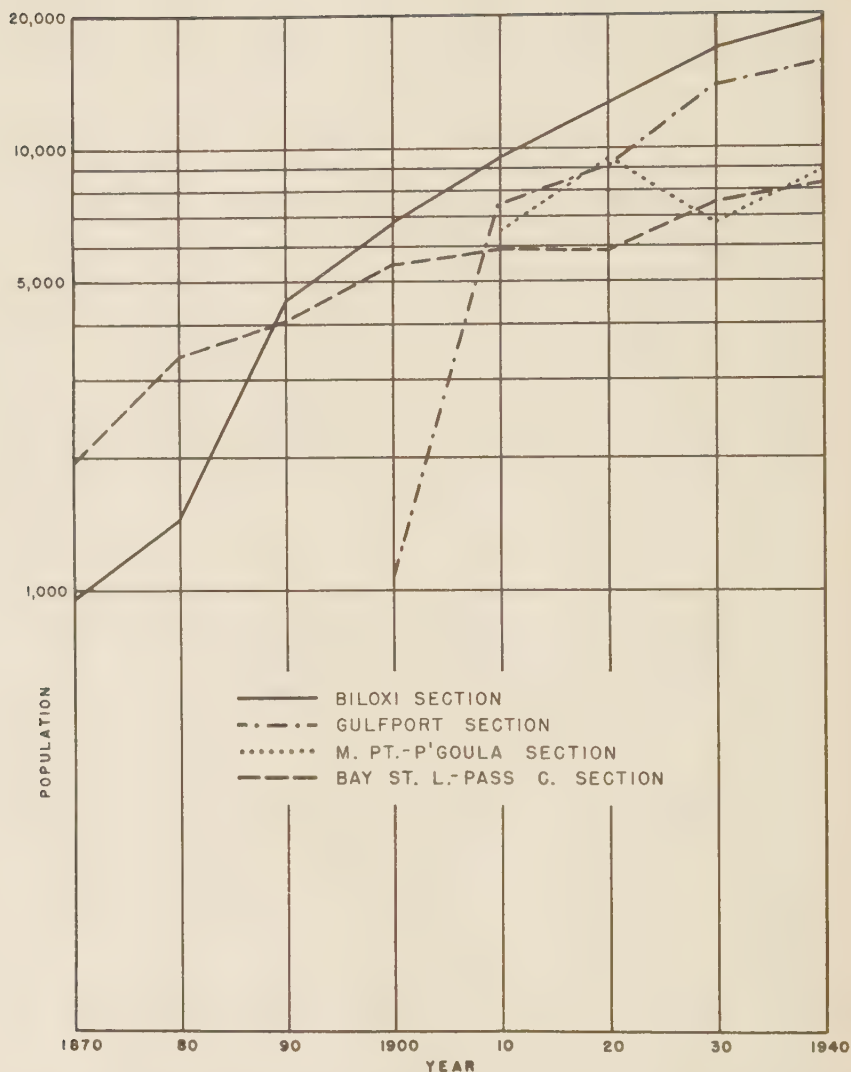


Fig. 2.--Population growth of urban sections of the Mississippi coast, 1870-1940. Some of the increases are due to addition of data for newly incorporated places. Bay St. Louis is added to Pass Christian as of 1880 and Waveland added as of 1890. Ocean Springs is added to Biloxi data in 1890, and Long Beach added to Gulfport figures in 1910. For population data by towns see Table 7. (Source: Sixteenth Census of the United States: 1940. Population, Vol. I, op. cit., p. 571, and earlier census volumes.)

slowly. While Biloxi's population jumped from 3,200 to 17,000 in the last half century, Ocean Springs has increased only about 75 per cent.

Gulfport became the second ranking town along the Sound in a single decade. From 1900 to 1910 it was the fastest growing town in the state. Since then its rate of expansion has leveled off and is about equal to that of Biloxi. All of the initial growth was based upon lumber exporting; latterly, the shipping function has been replaced to some extent by trade, manufacturing, and tourism which appear now to contribute about equally to growth of the community. Long Beach, like Ocean Springs, has also grown slowly. While Gulfport's population has more than doubled since 1910, Long Beach has increased only 50 per cent.

Although data on population of Moss Point and Pascagoula are not available for the period prior to 1910, it is logical to presume that most of the growth up to that time was based upon the lumber industry which was well developed by the late 1880's. Hence in about 30 years the two towns had acquired over 6,000 persons and the Section was more populous than the Bay St. Louis-Pass Christian Section. From 1910 to 1920 the rate of growth continued at an accelerated pace due to wartime shipbuilding and then dropped off almost to the 1910 level. In the decade just closed recovery based upon new industry has brought both towns back almost to peak 1920 populations.

An examination of the growth curves for individual towns reveals that only the two larger places--Biloxi and Gulfport--have gained population during every decade of corporate existence (Table 7). To be sure the rates of growth have decreased, but both towns have always shown a net gain for each ten-year period. In large measure, this trait may be ascribed to the economic stability resulting from the greater breadth of functions in the larger towns. All other communities at one time or another have suffered decreases in population. Pascagoula and Moss Point, as already indicated, declined following World War I, as did Ocean Springs for reasons unknown. During the war decade, on the other hand, resort towns at the west end of the Sound--Waveland, Bay St. Louis, Pass Christian, and Long Beach--all lost small percentages of their inhabitants, but immediately gained them back and more too in the 1920's when tourism, the resort industry and suburban development generally were increasing. During the decade

just closed all towns experienced gains in population which varied from 11 or 12 per cent for the six smaller places to 17, 21, and 38 per cent for Biloxi, Gulfport, and Pascagoula, respectively.

General Pattern of Occupancy

Political Patterns and the Built-up Areas

As in all urban communities, there is a general spatial correlation in the towns along the Sound between the shape and orientation of the built-up areas and the shape and orientation of the political areas. The correlation, however, is not everywhere close. The political cities enclose much unused land and in a few places built-up areas lie outside of corporate limits.

As can be seen on Figure 1, the gross pattern of the incorporated areas conforms in a general way to the configuration of the water front as represented by the Sound and the Pascagoula and Escatawpa Rivers. An examination of the built-up patterns reveals that they are even more closely moulded to the water front (Figs. 3-8).

Near the west end of the Sound the small unincorporated community of Clermont Harbor, separated from Waveland by Mud and Grand Bayous, occupies about one mile of the shoreline. The remaining eight miles of shoreline in Hancock County is enclosed within the political limits of Waveland and Bay St. Louis (Fig. 3). Within these municipalities the main alignment of used land is along the Sound and St. Louis Bay water fronts. Built-up area back from the water front is confined to the central section of each town. In Harrison County, the southwest tip of the broad peninsula, which forms the eastern lip of the St. Louis Bay, is unincorporated (Fig. 4). This small block of partly built-up shoreline is known as Henderson Point. From Henderson Point eastward the contiguous incorporated places of Pass Christian, Long Beach, and Gulfport enclose about 15 miles of shoreline. Pass Christian and Long Beach are long, narrow political units. The former is about one mile in depth by six miles along the Sound; the latter measures about one mile by four miles. Gulfport's political limits enclose an irregular, roughly rectangular-shaped block of territory. It is oriented with the compass and the southeast edge is sheared off by the angle of the shore-

line. The corporate area extends about two and a half miles inland and for five miles along the shore. As in Bay St. Louis, in each of these towns the built-up area adheres to the water front with nodal developments extending inland near the town centers.

Between Gulfport and Biloxi's western limit, a distance of about eight miles, the land is unincorporated (Figs. 5 and 6). This segment includes Mississippi City, adjacent to Gulfport at the shore, and Handsboro, located inland near the lower course of Bayou Bernard. The remaining five miles of inter-urban area is not identified as a community but it includes Beauvoir, a well-known landmark. Except for Handsboro virtually all used land in this unincorporated zone is restricted to the shore area.

The remaining five miles of Sound shoreline in Harrison County is incorporated in Biloxi, which occupies the eastern half of the peninsula formed by the Sound and Back Bay. The built-up pattern of the municipality differs from that of other towns along the Sound because of the peninsular site. Except for bayou indentations, the shore zone on all three sides is fairly well built-up. However, only at the center of town does the built-up pattern extend across the whole width of the peninsula.

On the east side of Biloxi Bay in Jackson County, Ocean Springs occupies the tip of the broad-based peninsula formed by the Sound and Old Fort Bayou at the north (Fig. 7). The political unit is a triangular-shaped area measuring three miles from east to west by two miles at the eastern and widest side. From Ocean Springs eastward across the southwestern quadrant of Jackson County to the broad, marshy, estuarine mouth of the Pascagoula River, there are no towns of note along the U. S. 90 or the Louisville and Nashville railway line, and no settlements facing the Sound. At the east bank of the Pascagoula channel, the town of Pascagoula occupies about six square miles of territory extending from the Sound margin inland to the south bank of Krebs Lake. Moss Point extends along the south margin of the Escatawpa River flood plain. On its lower course, above its confluence with Pascagoula off Griffin Point, the Escatawpa is oriented east-west. The political area encompassed by Moss Point measures about five miles east-west and is two mile wide at the west end and one mile wide at the east end. An unincorporated strip about two miles wide separates the municipalities. Disregarding the unincorpo-

rated zone, the overall political area of the dual community is roughly the shape of an inverted-L with Pascagoula forming the vertical section and Moss Point the crosspiece at the top.

The built-up pattern of these two towns is broken into clumps and alignments of settlement. In Pascagoula the Sound shore and river front is fairly well built-up but by no means completely used. Between the towns settlement is about as dense as it is within the towns. In Moss Point the used space does not conform to the banks of the Escatawpa River shore except in spots and the main areas in urban use are separated from one another by wide gaps of unoccupied land.

Street Patterns

Street patterns in the towns stem from the patterns of property subdivision. Two basic patterns of property subdivision exist, namely, the original French and Spanish land grants oriented with the water front and the rectangular grid survey subsequently introduced by the Americans. In every town both plans of subdivision are present in greater or lesser extent (Figs. 3-8).

Streets laid in conformity with the early land grants extend from the shore inland and are parallel to one another. They were so designed as to provide passage back from the water front. No provision was systematically worked out for cross streets paralleling the shore as in early days almost all movement along shore was by boat. Such cross streets as were required were laid out in a haphazard manner. Hence today movement through the centers of Bay St. Louis and Biloxi along the long axis of the communities is not easy because of paucity of streets and because of numerous jogs and dead ends. Irregular spacing of cross streets results in blocks of irregular size—generally uniform in width, but of uneven lengths. In the older towns, therefore, the term "city block" portrays various impressions. Indeed, development has been by streets and the term "block" has little validity at all.

In Waveland, Bay St. Louis, Pass Christian, Long Beach, and Biloxi the dominant pattern is, with minor variations, of streets perpendicular to the water front (Figs. 3, 4, 5, and 6). In Gulfport, a city planned and laid out in advance of and in expectation of rapid growth, the majority of street pattern is a checkerboard type (Fig. 5). The pattern was superimposed upon an

area already subdivided at the southwest corner in the old French style. Hence, that part of the Gulfport's street pattern is similar to patterns in the other older towns.

In Pascagoula the street layout approximates a checker-board design in part but it was not planned as such (Fig. 8). Orientation is with the beach on the south, the river on the west, and the railroad right-of-way which passes through the northern half of the town almost on an east-west course. At Moss Point the street pattern appears to be entirely a matter of expedience, lacking in any well conceived plan. A small section is adjusted to an early land grant that cut across the center of town on a southwest-northeast azimuth. In the eastern and newer part of town the few streets coincide with the rectangular survey. Generally the layout is haphazard and main routes follow the shortest distances between points.

In both Moss Point and Pascagoula the drainage pattern effects major breaks in the street layout. These surface irregularities probably discouraged any attempts, early in the development of the towns, of instituting uniform street patterns. In the other places, especially Gulfport and Biloxi, street patterns recently dedicated are laid out in checkerboard fashion and in disregard for surface configuration and poor drainage.

Besides the two basic street systems, i. e., the parallel and checkerboard, in a few recent residential subdivisions, curvilinear patterns have been adopted. The best examples are Oakwood in northwest Biloxi, and Broadmoor in eastern Gulfport. Such patterns, however, are conspicuous by their absence in a majority of the coast communities.

Railroad Patterns

Two class I railroads, the Louisville and Nashville and the Gulf and Ship Island branch of the Illinois Central System, serve the urban communities along the Sound. A small freight line, the Mississippi Export, connects Moss Point and Pascagoula with Lucedale, Mississippi. The Louisville and Nashville passes through all communities but Moss Point and Handsboro. The Gulf and Ship Island road connects Gulfport, its southern terminus, with Hattiesburg and Jackson where it joins the mainline of the Illinois Central. Thus only Gulfport is served by both major rail lines. In the towns along the strand served by the Louis-

ville and Nashville, the right-of-way is a straight line extending through or near to the functional center of each place. Regardless of location of town boundaries, in the smaller communities, such as Long Beach, Waveland, and Ocean Springs, the right-of-way forms the effective inland limit for a large part of their built-up areas.

The railroads at Pascagoula and Moss Point are laid out in a triangular pattern. The Louisville and Nashville crosses central Pascagoula on an east-west line, and thence northeastward through Kreole, the station that serves Moss Point and the paper mill. From its main yard near the center of Moss Point, the Mississippi Export Railroad Company has a line extending south to Pascagoula and another extending east to the paper mill (Fig. 8).

The simplicity of this layout of rail facilities along the Sound can scarcely be called a pattern, but nonetheless the rail lines are a major landscape feature in all towns and the patterns of streets, political and property boundaries, and of industrial and residential land use exhibit nearly as much relation to the right-of-ways as they do to the water front. The right-of-ways are important lines of demarcation affecting most phases of urban expansion.

Residential Patterns

Residential lands, the major type of land use in all towns, constitute the body of the built-up areas. As has already been noted in discussing the built-up areas, in towns facing directly upon the Sound, two features of the residential pattern stand out. (1) The tendency for residences to adhere to the shoreline in ribbon-like fashion, and (2) the clustering of residences around the commercial cores. Viewed on a small scale the entire built-up pattern along the strand is ribbon-like, indented by scallops of varying lengths and widths of unused land. The ribbon narrows to a thin strand near the corporate limits and widens to a broad band near the commercial centers. This arrangement means that the bulk of residential property lies between the Louisville and Nashville right-of-way and the beach. Only in Gulfport and Biloxi is there an appreciable amount of residential land north of the railroad. Depth of inland extension depends, then, upon size of the town and upon importance of highways lead-

ing inland from the beach toward which urban forms tend to be drawn. These features of the residential pattern obtain as much for curving shore outline in the Bay St. Louis area, as they do along the straight shoreline in Harrison County.

The pattern of residential land use in the Moss Point-Pascagoula area bears little similarity to that of the strand on the western shore of the Sound. Except for the southern end of Pascagoula, which faces the Sound, the residential pattern does not adhere closely to the water fronts. The river banks are not as attractive for housing as the Sound margin with its sandy beaches. Moreover, as has already been suggested, the river margins are dissected by bayous that effectively inhibit growth of a continuous pattern of used land. Hence in Moss Point and Pascagoula, the pattern of residential land is characterized by (1) compact nuclei around the commercial centers, (2) small, scattered clusters of homes on the accessible portions of interfluvial uplands, and (3) alignments along the main thoroughfares linking the two commercial cores.

The pattern of residences in terms of quality exhibits two area-wide features, namely, (1) high-grade residential land with but few exceptions faces upon the Sound, and (2) almost all low-grade residential land is located north of the Louisville and Nashville right-of-way, except, of course, in Moss Point and Pascagoula. In the latter towns low-grade dwellings are numerous and widely scattered and do not relate to any particular set of site conditions.

Manufactural Patterns

As has already been stated, most manufacturing along the Sound is localized in four urban areas, namely, Biloxi, Gulfport, Moss Point, and Pascagoula. Within these towns further localization is governed by need for transportation. For most of the industries, waterways are a basic requirement and rail spurs an added advantage. For other industries excluding those operating to satisfy local demands, rail connections are a necessity. These requirements establish the pattern of localization. The seafood plants, paper mill, ship- and boatbuilders, and woodworking plants are all on the water front. The textile factories and fertilizer plant are accessible to the railroads. Plants supplying local demands tend to be near their main markets, i.e., commercial

cores of the largest towns, and not necessarily along the rail lines.

In Biloxi the seafood plants are on East Beach in the lee of Deer Island and on the south shore of Back Bay east of Iberville Bridge. These sites are both well protected anchorages. Boat-building enterprises also are found in these and the intervening part of the bay shoreline. Producers for the local market are primarily near the railroad in the vicinity of the station.

In the Moss Point-Pascagoula Section the larger two factories are on the river fronts. Ingalls Shipbuilding Corporation is near the mouth of the river in the west edge of Pascagoula and the Southern Kraft Corporation on the south bank of the Escatawpa at the east end of Moss Point. All sawmills, woodworking, and small boatbuilding enterprises are located at scattered points along the rivers between two large factories. Jackson County Woolen Mills is the only plant not on the river front. It is situated on a rail spur in the "no man's land" midway between the municipalities.

Thus the manufacturing patterns in these towns exhibit a measure of localization, and there are rather poorly defined industrial districts. Within the districts much space is vacant, and except for seafood establishments in Biloxi, the plants are not well concentrated. The vacant segments of the shorelines, are due partly to useless bayous¹ and partly to long water fronts and a low demand for industrial sites.

Gulfport does not have space within its man-made anchorage basin to allow for extensive industrial development, and its main industries are types that need not be located at the quayside. The fertilizer plant and garment factory, the latter making no use of water transportation at all, are both situated along the Illinois Central in the northern part of the city.

Commercial Patterns

Every town along the Sound has a main business section. The size and compactness of the commercial centers depend upon (1) the size of the town or local market and (2) its functional impor-

¹In June, 1946, Biloxi city officials set up a plan for dredging the four bayous that indent the Back Bay shore, with a view to making them into industrial sites.

tance as a trade center for surrounding territory. Regardless of size, however, locations of the commercial sections within the built-up area tend to exhibit certain characteristics of similarity. All are off center near the water front and centrally placed with respect to the long axis of the communities. They tend generally to be located between the railroad stations and the beach line, and roughly at or near the intersection of the principal arterial highways. These general rules apply more to towns facing the Sound than they do to the two towns facing the rivers. By and large, where route intersections, railroad stations, and the beach front are fairly near one another, the business section is a concentrated development, where they are not approximately coincident, the commercial section is not a compact zone. Regardless of these generalities no two commercial centers are exactly alike.

Gulfport has a compact commercial core about three blocks square located at the southeast corner formed by intersection of the Louisville and Nashville and Illinois Central rail lines, with extensions east and west along U. S. 90 and northward along U. S. 49. Biloxi's main shopping center is on a single main street parallel to and south of the railroad. Its impressive array of tourist-commercial establishments are concentrated along the beach south of the shopping zone, and the wholesale and heavy consumers goods business tend to be near the railroad station north of the shopping zone. These three nuclei of business houses are separated from one another by residential properties.

In Bay St. Louis the principal business zone is along Front Street, between the approaches to rail and road bridges that span the bay mouth, and a small secondary development at the south side of the railroad yards. In Pass Christian the commercial section is not closely built-up; rather the business houses are along four streets forming a rectangle, located south of the railroad station. Most of the shops are on the beach road, or south side of the rectangle. The few stores in Long Beach are on the north-south street connecting the railroad with the beach in the center of town. At Ocean Springs the shops are located at the junction of U. S. 90 and roads leading north across Old Fort Bayou and south toward the beach.

The Moss Point commercial center is a small but compact three-pronged development at the intersection of main roads to

the north, east and south. Pascagoula's business district is a rectangular area lying on both sides of the Louisville and Nashville right-of-way between the river front and main thoroughfare linking U. S. 90 with the beach.

The pattern of tourist-commercial facilities is strung out along the shoreline, with main concentrations in Gulfport and Biloxi. Their arrangement reflects the fact that they are service establishments that provide space for tourists and vacationists who seek to enjoy the climate, scenery, and recreational facilities. These features are not limited in their distribution to the urban centers but are primarily products of the shoreline, consequently the pattern of tourist-commercial establishments shows little spatial relationship to the ordinary commercial pattern, and is as much non-urban as it is urban.

Factors Bearing upon Urban Development

Origin and development of towns along the Sound have been an outgrowth of two sets of factors working in unison--factors of site and factors of situation. Site factors prevail most strongly upon specific location and patterns of expansion, while situational factors bear mainly upon the character and amount of urban growth. Since most of the towns have a prominent resort function, site conditions are not only of fundamental importance to location and patterns but to development as well.

Site Factors

The principle site factors influencing urbanization are terrain and climate. To a lesser degree water supply also has had some effect upon the location and growth of urban forms.

Terrain.--From point of utility the terrain along the Sound margin may be divided into two broad categories, namely, (1) the coastal pine meadows or Pamlico plain, which is capped in places by a thin veneer of beach and dune sand, and (2) the salt marshes. Urban forms are confined to the former surfaces, which, although by no means everywhere perfectly drained, offer few limitations to urbanization, while the latter are perennially wet, brackish, treeless, and devoid of habitations save for scattered fishing camps.

The chief areas of tidal marshland are indicated in gen-

eralized form on Figure 1. They include, in addition to the Pascagoula River flood plain with its anastomosing pattern of distributaries, most of the shore between the river and Ocean Springs, all of the shore west of Clermont Harbor, and almost all of the shore from Pascagoula eastward to Mobile Bay. The small areas that are well drained in these portions of the littoral suffer from isolation; they are inaccessible, and are therefore also largely uninhabited.

The urbanized areas of the Pamlico plain average about 15 to 20 feet above mean sea level. In the vicinity of Moss Point and Pascagoula, except for about a dozen bayou indentations, the surface is generally level with the higher surfaces occurring near the river in Moss Point where natural levees from 18 to 20 feet high have formed as a result of overflow onto the low plain to the east.¹

From Biloxi Bay to St. Louis Bay the outer margin of the plain is capped by beach sand and dune ridges which reach a maximum elevation of 33 feet.² The dune ridges are best developed between Biloxi and Gulfport where local relief is about 10 to 15 feet. West of Gulfport, dunes are absent; only a very thin layer of beach sand exists, and the surface is almost level. From Pass Christian the surface slopes imperceptibly westward so that in the locality of Henderson Point the land is approximately five feet above mean sea level.

At Bay St. Louis the height of land is near the beach in the central part of town, giving the shore the appearance of a low headland, and the surface slopes very gradually westward and northward.

Being near grade level, slight undulations in the surface along the Sound margin produce marked differences in conditions of drainage, and choice of some of the original town sites appears to have been made with drainage as the prime consideration. This appears to be true of Bay St. Louis and Pass Christian where the altitude of the town centers is slightly higher than that of adjoining portions of the shore. As these and other towns along

¹Glen F. Brown, et al., Geology and Ground Water Resources of the Coastal Area in Mississippi, Bulletin No. 60, Mississippi State Geological Survey (University, Mississippi: 1944), p. 26.

²Ibid.

the shore have expanded they have concentrated on the best drained surfaces and avoided the bayous, inter-dune swales, and other locally swampy depressions. Thus in the vicinity of the Long Beach-Pass Christian boundary, the level surface, lacking in drainage channels and underlain by impervious sub-soils, is wet during the winter months when the evapo-transpiration rate is low, and the area is only sparsely settled (Figs. 4 and 5).¹

Configuration of the shoreline appears to have had a direct bearing upon settlement only in case of Biloxi and Handsboro. First white settlement on the coast was established along the shore of Back Bay of Biloxi in 1699 by Iberville, the French explorer, who had been commissioned to establish a capitol for French colonial territory. Landing was made at Biloxi because the anchorage in the lee of Ship Island was relatively quiet and because Back Bay was a sheltered harbor. However, apart from being a reasonably good harbor, the Back Bay site offered nothing in favor of location of a capitol, and in 1702 the colony moved to Mobile where conditions offered a better opportunity of providing food, a more palatable water supply, and was infinitely more accessible to the interior via the Alabama River system.²

In 1720 Biloxi (New Biloxi) was again occupied by the French for two years. This time the headquarters was on the north side of Biloxi peninsula facing Back Bay, whereas the original site had been on the northwest side of Ocean Springs facing Old Fort Bayou. Although this second visit was only a temporary settlement that preceded the move to New Orleans, it did serve to establish a village plan and it appears that a few of the colonists remained continually after the capitol had been moved.³ Years later when the seafood industry began to develop, the quiet waters of Back Bay and shore of the peninsula lying in the lee of

¹The drainage ditches on Figures 4 and 5 are part of a system developed upon a similar surface so that the land could be cultivated.

²For a detailed discussion of the factors bearing upon Iberville's choice of site for a capitol see, E. L. Ullman, Mobile: Industrial Seaport and Trade Center (Private edition; Chicago: University of Chicago Libraries, 1943), pp. 10-14.

³W. L. Guice, "History of Biloxi," Biographies of Some of the Business and Professional Citizens and Public Officials of the Mississippi Coast, Fiftieth Anniversary Souvenir (Gulfport: The Daily Herald, October, 1934), p. 9.

Deer Island were chosen as the naturally most ideal locations upon which to establish the packing plants. This industry, as we have seen, is the most important in Biloxi, and one may properly conclude, therefore, that shore configuration has been of fundamental importance to the expansion of that city.

Location and development of Handsboro near the lower end of Bayou Bernard, as a sawmill town and supply point for inland farm populations, was also in a sense a response to shore configuration.

Besides surface conditions, drainage, and shore configuration, the condition of the beach itself has had a bearing upon urban development. All of the coastline along the Sound is undergoing slow degradation,¹ consequently the beach in its natural state was neither broad nor stable. Gradual encroachment of the sea accompanied by serious wave-cutting during storms and corrosive action of shore-wise currents long detracted from the beach for recreational purposes and as a place of permanent residence. Excessive maintenance costs handicapped development of a roadway along the water front, and for decades the main road linking Biloxi and Pass Christian was the Pass or Back Road located back from the beach along what was approximately the height of land between the towns (Figs. 1, 5, and 6).

This hazard to the beach road and residential property led in 1924 to the construction of a concrete seawall along the shore. By 1930, thirty-two miles of seawall had been built covering all the shoreline in Harrison County and all the urban exposures in Jackson and Hancock counties. The total cost was \$3,400,000. In large measure the seawall eliminated much of the beach and at the outset was viewed by many as a detriment to the resort industry. However, damage to the beach was more than offset by abatement of erosion which guaranteed the stability of the beach roadway and greatly increased the utility and value of shoreline property. As a result, by rectifying the only serious site handicap to settlement along the Sound, the seawall has been instrumental in the spread of habitations along the shore and consequent elongation of the urban patterns.

Climate.--The resort industry along the Sound is primarily an outgrowth of coastal position and the modifying influence of

¹Brown, et al., op. cit., p. 30.

on-shore breezes upon temperatures. The resort industry, as we have seen, is of major importance to most of the shore communities, consequently, local climate has had more bearing upon urban expansion than is true of most places throughout the country.

The coast of Mississippi is in the humid sub-tropical climatic zone that characterizes east margins of continents in lower middle latitudes. The gross characteristics of rainfall and temperature are similar to those of most places on the Coastal Plain in southeastern United States. However, because of coastal location the tempering effect of on-shore breezes tends to modify temperature extremes and makes the shore communities considerably more liveable, especially in summer, than inland places not reached by the tempering breezes. As can be seen from Table 5 the modifications are not pronounced and tend only to alter the extremes.

TABLE 5
TEMPERATURE DATA FOR SELECTED STATIONS IN
SOUTHERN MISSISSIPPI^a

Station	Years of Record	Mean Average Annual	Average Annual Maximum	Average Annual Minimum	Maximum Average Monthly
Bay St. Louis.....	38	68.1	76.9	59.3	90.2
Biloxi.....	38	68.4	76.8	59.9	90.4
Pearlington ^b	39	67.4	77.5	57.3	90.2
Hattiesburg ^c	35	66.6	78.4	54.8	92.9

^aSource: Progress Report on State Planning (Jackson, Mississippi State Planning Commission, 1938), p. 16.

^bPearlington is located at the western side of Hancock County about six miles from the Sound.

^cHattiesburg is about 65 miles north of Gulfport.

Perhaps the chief benefit derived from on-shore air flows in summer is a reduction in sensible temperatures that makes night temperatures much more comfortable than at inland stations.¹ Moreover, temperatures along the Sound are remarkably equable.

¹Progress Report on State Planning, op. cit., p. 17.

The diurnal range is never great; temperatures remain much the same from day to day and heat waves are rare.

Obviously the zone facing directly upon the Sound is in best position to benefit from even the most gentle breezes, and the pattern of settlement, strung out as it is, in a thin line along the shore, is partially an adjustment to this ameliorating aspect of local climate.

The characteristics of climate in the winter season are relatively less attractive than they are in the summer season. Killing frosts may be expected anytime during the three winter months. The average length of the frost-free period is about 270 days.¹ This feature restricts the coast's popularity as a winter resort. The area, while infinitely more attractive in winter from the temperature point of view than the northern part of the state, cannot be compared favorably with the southern part of Florida with its 12 months frost-free period. Furthermore, the Gulf coast margin in winter has a relatively high humidity and the air is definitely "raw" although the temperature may be moderately cool by the thermometer.²

High humidity and "rawness" of the air in winter arise from the relatively heavy precipitation. At Bay St. Louis, for example, the annual rainfall averages 62.3 inches which is rather uniformly distributed throughout the year.³ In consequence of both dampness and coolness, the peak tourist season in "winter" is in early spring--roughly from mid-February to mid-April--when it is warmer and when tourists are returning from Florida.

Water supply.--Ease of procuring water has also favored the spread of settlement along the Sound. All of the coastal area is in a zone of artesian flow.⁴ Although the possibility of obtaining artesian water along the coast was pointed out as early as 1860, the first artesian well appears to have been drilled about 1884.⁵ After that time artesian wells, most of them from

¹Ibid., p. 18.

²Ibid., p. 25.

³Only the Pacific Northwest coast and southern Appalachian Highlands have more rainfall than the area along the northern Gulf of Mexico.

⁴Brown, et al., op. cit., Plate II.

⁵Ibid., p. 66.

500 to 800 feet deep, became commonplace.¹ Discovery of artesian water came too late to be of aid to first settlement along the Sound, but it appears to have been a helpful factor in the expansion of settlement since 1900. Because of its plentifulness and ease of procurement, nearness to a supply of water has not been a factor in the localization of industry or of other enterprises, and nearly every large water user including hotels, canning plants, schools, lumber mills, and other factories as well as many private homes have private wells.

Situational Factors

As is true of most urban places, growth of towns along Mississippi Sound has been prompted primarily by factors of a situational nature. These are the factors that give rise to flows of goods and people, which, in turn make possible the utilization of site conditions that favor urban growth. Throughout the history of urban development along the Sound three situational factors have been of signal value, namely, (1) position in relation to Mississippi Sound and the Gulf of Mexico, (2) position in relation to the pine forests of the coastal plain, and (3) position between New Orleans and Mobile.

One or more of these factors has made some contribution toward the growth of each town. The value of the contribution has tended to increase with improvements in transportation; indeed, without transportation the situational factors would have meant nothing, and the towns in all probability would have not expanded beyond the dimension of villages and some would not exist at all. In recent years other situational factors have begun to aid urban expansion and bolster local economies. They are: (1) nearness to the Cotton Belt, (2) nearness to the Birmingham iron and steel district and (3) situation between Florida and the Middle West. Influence of the latter factors is of a fairly restricted nature and beneficial to a small part or to a single aspect of urban development.

Position in relation to Mississippi Sound and Gulf of Mexico.—Position in relation to Mississippi Sound and the Gulf of

¹In 1944 there were 476 logs for wells in the three coast counties upon which study of ground-water resources could be based. Many other wells exist and many have been abandoned. *Ibid.*, p. 67.

Mexico became a factor of some importance in urban settlement with the first landing of the French in 1699 and with the establishment of New Biloxi in 1720. In the decades that followed, the small community, isolated by land and by-passed by seaward movement, grew but little. It was a subsistence colony that scraped a living out of sickly agricultural endeavors and exploitation of the rich fishery resources of the Sound. As other towns were established in the early part of the last century, the Sound was used as the main means of transportation and source of supplies, as well as the best source of food. Soon after the New Orleans, Mobile and Texas railroad was completed in 1870, experiments were commenced in canning oysters for shipment to distant markets, and within fifteen years, the seafood packing industry was well established in Biloxi. At one time or another each of the principal towns on the Sound except Long Beach has had some seafood packing activities. The seafood packing industry is, therefore, the oldest and most widespread of all the bases for urban support along the Sound. Furthermore, much hand labor has always been employed in the packing processes; consequently, the industry has been responsible for a large increase in the urban population (Chapter IV).

The fishery resources that prompted first attempts of commercialization were the oyster beds, which were widespread in the Sound--particularly close inshore where the waters were relatively shallow, not highly saline, and not muddy. As the industry developed the vast oyster beds in Louisiana waters at the northeast edges of the Mississippi River delta and around Chandeleur Islands became the prize resource of Mississippi oystermen, and at the present time from two-thirds to three-fourths of all oysters, depending upon the nature of the crop, are dredged from St. Bernard Parish waters in Louisiana.

A further big advantage to the Gulf Coast seafood industry was the presence of shrimp in the waters of the Sound and Gulf. At the outset, shrimp were not exploited as much as oysters because they were more perishable and harder to preserve. Constant experimentation, prompted by the evident advantage of being able to use the same labor and much of the same equipment to process both shrimp and oysters, gradually led to successful processing techniques, and since about 1900 shrimp canning has been, on the average, of more importance than oyster canning. In 1937

Mississippi was the second ranking shrimp-packing state with 19 per cent of the nation's total pack, and the leading oyster-packing state with 45 per cent of the nation's total pack.¹

Position in relation to the coastal plain.--Position of towns along the Sound in relation to the forest resources on the adjoining coastal plain has in general contributed about as much toward their expansion as the fishery resources. The contribution has not been as widespread, and because of the slow-replenishing nature of timber, it has not been as permanent. Once exploitation of timber was begun, it progressed rapidly with tremendous strides to a huge volume and then tapered off until, at present, timber resources have little direct effect upon any place but Moss Point. Also unlike the fishery industry, lumbering had to await development of transportation so that the timber could be extracted, whereas the seafood industries had to await transportation to get the products to market. Therefore, forest exploitation has always been confined to places especially equipped to collect, mill or export lumber. Only at Pascagoula and Moss Point, located at the mouth of the Pascagoula River system, and at Gulfport, southern terminus of the Gulf and Ship Island railroad, has this situational factor been a prominent motivating force toward urban development.

Before timber exploitation commenced in on a large scale, towns along the Sound had some functional ties with the back country. Handsboro, as we have already seen, and Pass Christian appear to have depended rather heavily upon the meagre populations in the immediate interior as a market for goods. The people in the back country were livestock raisers who grazed cattle and sheep on the extensive grasslands that characterize the vegetation complex of the lower coastal terrace. Handsboro, located at the site of the bridge across the lower end of Bayou Bernard, was well situated to serve farmers north of Back Bay and to mill timber floated down the bayou. Pass Christian had important trade connections with farm populations located north of Wolf River (Fig. 1).²

¹R. H. Fiedler, The Fishery Industries of the United States, 1932, Admin: Report No. 37, Bureau of Fisheries (Washington: Government Printing Office, 1940), pp. 242, 245.

²Lang points out that in ante-bellum days Pass Christian had three large stores, one employing 27 clerks and another em-

Other places, such as Bay St. Louis and Ocean Springs, had some early day connections with inland agriculture but the ties were limited to small areas that were insufficient to support much urban growth.

Thus it appears fairly evident that, except for lumber exploitation, position on tidewater at the edge of the coastal plain with its somewhat meagre agriculture and livestock enterprises, contributed little toward sustained growth of the early coastal communities.

Since most of the original timber stands have been cut, agriculture has become the principal industry, but it is mainly subsistence or part-time farming and not prosperous enough to have a notable bearing upon trade in towns along the Sound. Indeed, some of the most successful farm enterprises--the dairy and chicken farms--have developed primarily to supply the urban market along the Sound with milk and poultry products. These are obviously not the sorts of farm activities that promote urban growth; instead, they depend on it. Failure of the adjoining coastal plain to support a prosperous surplus-producing farm economy is in essence a handicap to towns on the Sound that hampers their commercial development.

Position between New Orleans and Mobile.--Position between New Orleans and Mobile has materially aided urban growth along the Sound in two ways. First, by being situated along the shortest overland route between the two large cities, the coast has benefited by each improvement in transportation facilities connecting them, and, second, nearness to New Orleans has provided a supply of urbanites anxious to take advantage of the coast resort facilities. The first factor has helped all coast

playing 15, that served rural trade from a large area that included Poplarville, Picayune and Lumberton. E. H. Lang, History of Harrison County (Gulfport; Dixie Press, 1936), p. 22. Lang's statement is confirmed by another source which points out that prior to 1817 when Mississippi was admitted to the Union, the contributory area served by Pass Christian extended inland as far as Black Creek. (Black Creek is a tributary of the Pascagoula River that rises about 15 miles northeast of Columbia and flows in a southeasterly direction crossing U. S. 49 about midway between Hattiesburg and Wiggins [Fig. 9]). See, Mississippi, A Guide to the Magnolia State, Federal Writers' Project of the Works Progress Administration (New York: Viking Press, 1938), p. 296.

towns; benefits accruing from the second have been indirectly proportionate with distance from the metropolis.

In the pre-railroad era, as we have seen, existing coast communities were ports of call for intracoastal water-borne carriers that plied the Sound between Mobile and New Orleans. Supplies were brought in by boat, passenger traffic moved by boat, and contact with the outside world in general was perforce made by boat through New Orleans. Overland transportation was poorly developed, and confined, for the most part, to local movement between the Gulf Coast towns.¹

During the period of reliance upon water transport location between the two large neighboring ports appears to have been of some slight assistance to coast towns, but nothing compared to the advantage that was realized upon completion of the New Orleans, Mobile and Texas railroad.²

Effect of the New Orleans, Mobile and Texas railroad³ upon the Mississippi coast towns was immediate and far reaching. Almost at once the isolation that had kept them as places of small renown, was removed and substituted in its stead, was position on an important branch of a large rail network. It meant also that neighboring Mobile and New Orleans, the metropolises of the Gulf Coast region, were brought nearer to the intervening coastal watering places, and their metropolitan influences placed in position to have a more direct bearing upon economic life along the

¹The ancestral route now followed by U. S. 90 was the "Old Spanish Trail," a route that appears to have been very little used, and in no wise as important as Natchez Trace.

²The route followed by the railroad between Mobile and New Orleans was wisely chosen for two reasons. (1) It was the shortest and, except for bridges required across bays at Biloxi and Bay St. Louis, had no more marshland than any route laid out farther inland, and (2) it connected Biloxi, Pass Christian and Bay St. Louis and ran near to South Pascagoula--the leading four communities in the southern tier of counties in Mississippi. Furthermore, the Pascagoula River valley is narrower at its mouth than at any point up-stream in Jackson County--an added reason for crossing the river in the vicinity of South Pascagoula.

³The Louisville and Nashville Railroad Company leased the 141 miles of trackage connecting Mobile and New Orleans from the New Orleans, Mobile and Texas Railroad Company in May, 1880 and purchased it outright seventeen months later. See, Kincaid A. Herr, The Louisville and Nashville Railroad, 1850-1942 (Louisville: The Louisville and Nashville Magazine, 1943), p. 34.

Sound.¹

The new rail line served to stabilize and guarantee the future of Pass Christian, Bay St. Louis, and Biloxi. It doomed their functions as local ports of entry for trade and communication, and drew attention away from their respective water fronts and toward the railroad stations and associated functions. The railroad lent impetus to the establishment of new towns, as well as enhancing those already extant. At Scott's Stop, Long Beach began to grow. Waveland became an incorporated place and assumed the name of the railroad station. In Jackson County, where the right-of-way passed about a mile north of South Pascagoula, a small resort village facing the beach, a new town was started around the railroad station and given the name of Scranton. In 1871 the state legislature authorized county officials to move the county courthouse from Americus (about 22 miles north of Pascagoula) to a place at or near the railroad depot.² This move gave Scranton two functions (transportation and government) whose combined significance outweighed any advantage boasted by South Pascagoula, and Scranton eventually became what is now the main business section of modern Pascagoula. Thus the railroad had a positive, developmental effect upon each community along the Sound through which it passed³ from Waveland to Pascagoula.

The same factors that made development of a railroad along the Sound a practicable proposition, ultimately led to the construction of U. S. 90. Highway construction was confronted with and delayed by the same engineering problems that faced the railroads, namely, the long distances that required bridging and filling. Furthermore, because of the jurisdictional problem between counties and states, the roadway did not become a reality

¹The railroad reduced running time between New Orleans and Mississippi City from ten to two hours. See, R. A. Wilkinson, *The Gulf Coast* (Published by the Passenger Dept., Louisville and Nashville Railroad Company, 1886), p. 42.

²Fred Taylor, *History of Jackson County* (Moss Point Advertiser, Southern Kraft edition, January, 1935).

³As far as can be learned the railroad had no effect at all upon Handsboro, located about a mile north of the Mississippi City depot. In 1893 the village was thriving and it was expected that the Gulf and Ship Island Railroad Company would build a branch line into the town. Statement from Mr. Clarence Kerns, local historian, based upon study of Daily Herald files, Biloxi.

until backed by coördinated effort of federal and state highway departments.

The value of a highway along the Sound became apparent to all residents as soon as tourists began to use automobiles as a means of travel (Chapter III). The coast counties, and only resort area in the state, were among the first to agitate for a hard road system and to expend county funds for highway construction.¹

Even with federal and state financial backing construction of the highway, unlike the railroad, was a piecemeal process in which detours and ferries were eliminated one at a time, until the route is now (since 1939) almost as direct a link between Mobile and New Orleans as is the railroad.

The strategic value of U. S. 90 as the southernmost transcontinental highway is apparent. And the amount of traffic (Fig. 9), about two-thirds² of which is foreign, has been a big factor in expansion of resort and tourist facilities along the Sound (Chapter III).

Associated with advantage of position on the shortest route between Mobile and New Orleans is the benefit that has accrued to coast settlements from proximity to New Orleans. Ever since New Orleans began to prosper as a port, its wealthy residents have sought the nearby shore of Mississippi Sound in order to escape the hot, humid summers of the delta. Other people, particularly the well-to-do planters, also frequented the Sound shore in early days, but New Orleans, by virtue of its size and proximity has always dominated the vacation trade. Indeed, the shore properties in the westernmost communities of Waveland, Bay St. Louis and Pass Christian are largely owned by New Orleanians (Chapter II), and to a degree these towns may be correctly classified as summer residential suburbs of the metropolis. While in early days this resort business was confined primarily to wealthy

¹In 1927, Harrison County was exceeded only by Hinds (Jackson) and Washington (Greenville) Counties in total mileage of paved roads, and the road from Pass Christian to Gautier (Fig. 1) was the longest strip of pavement in the State. Official highway map, Mississippi (Jackson, State Highway Department, 1927).

²In 1940, 67.2 per cent of all traffic on U. S. 90 at a point in the western part of Hancock County near the Louisiana line was foreign. Information from Mr. Wolff, State Highway Department, Jackson.

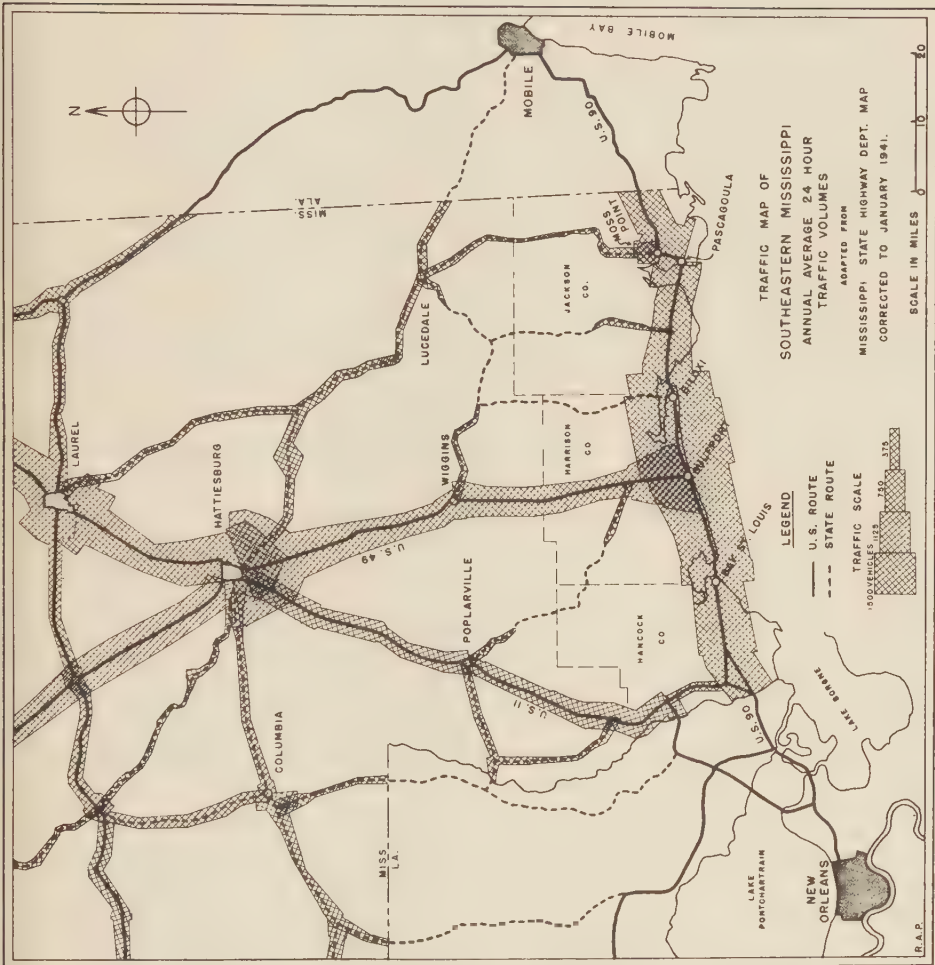


FIGURE 9

families, it has now, with the use of the automobile, spread to a wider segment of the population, as is evidenced by new construction of small summer cottages and an increase in use of tourist courts (Chapter III). Moreover, New Orleans is only 45 miles from Bay St. Louis by road, and less than an hour and a half away by bus or train, consequently, the coast is within easy reach of many other people who wish to use it for a day or a few hours at a time.¹

Proximity of Pascagoula to Mobile's urban population, for a time before and after the Louisville and Nashville railroad was built, attracted many Mobilians to the Sound shore in that area, but because Mobile was smaller, farther away, and because ultimately resorts began to develop on the Alabama shoreline, Mobile has never contributed to the resort function of the Mississippi coast, as has New Orleans.

Although location between Mobile and New Orleans has been generally regarded as advantageous to Mississippi coast towns, it is not universally true for all aspects of urban development. The chief detrimental effect of the neighboring metropolises involves the competitive feature of overlapping and expanding trade areas. Both larger places draw trade away from the small coast towns, and though the presence nearby of large shopping centers may please individual residents of the coast, they certainly are not an aid to growth of well-rounded local trade centers. It is partially in consequence of this fact, that the chief shopping center on the Mississippi coast is Gulfport, which is located roughly midway between the larger two cities, and thus in best position to dominate the small remaining section of the coastal area that is not directly within the trade area of either New Orleans or Mobile (Chapter III).

Nearness to Mobile may be cited as a disadvantage to Moss Point and Pascagoula during the period of heavy timber cutting on the coastal plain. Construction of the Mobile, Jackson and Kansas City Railroad line (now part of Gulf, Mobile and Ohio system) from Mobile northwestward diverted much timber from the headwaters of the Pascagoula River basin that might otherwise have

¹For decades special trains operated by the Louisville and Nashville have accommodated weekend and holiday crowds from New Orleans.

found its way downstream to Moss Point. While this condition was only of temporary duration, it is a good example of how the larger cities have tended to expand and dominate the commerce of large areas at expense of the small intervening coastal communities (Chapter V).

Other situational factors.--Despite the fact that Gulfport has been a deep seaport for nearly four decades and is as near to some of the cotton producing counties as are Mobile and New Orleans, cotton exporting has not been of any importance until quite recently. As has been pointed out, Gulfport developed as a lumber port and until after 1930 lumber constituted the bulk of all commodities passing over its docks. With recent decline of lumber exports efforts have been made to provide storage and compressing services so that cotton might become an item of trade. A few tons have been shipped in the past ten years, but as yet there is little indication that it will become of much significance or that nearness to the Cotton Belt will ever be a factor that will stimulate urban expansion (Chapter III).

Nearness to the Birmingham iron and steel district is similar to nearness to cotton area in that (1) it has become important only recently and (2) its immediate effect is confined to only one part of urbanized coast. The situational tie-up with the iron and steel district was effected in 1939, when Ingalls Shipbuilding Corporation opened its yard in Pascagoula. Although the plant is now farther from the iron products than it was at Chickasaw, Alabama, upstream from Mobile, it is more accessible to the Sound and the two factors probably average out (Chapter V). In contrast to cotton exporting which requires little labor and thus has only slight effect upon the employment structure of Gulfport, the shipbuilding business requires much labor, and already in 1940 its effect upon the population, trade and the housing situation in Pascagoula were very considerable.

Finally, location of Mississippi coast towns in general between the Middle West and Florida, has some value from point of the winter tourist business. The total revenue value of this point is not great and indeed there is no way of quantitatively proving its worth. But nonetheless tourists from the Midwest who winter in Florida, commonly drive to Mississippi Sound and thence east to Florida, instead of taking a diagonal route that would lead directly to their ultimate destinations. The advantage of

this routing is twofold. First, it enables them to get to relatively warm temperatures more quickly, and second, it offers the possibility of a short stopover along the Sound or in New Orleans, either en route north or south. From evidence gathered in the field it appears that both of these points attract numerous winter guests to the Sound area.

In summary, then, we have seen that towns have developed where relatively high, well-drained land fronts directly upon the clear waters of the Sound. The first communities grew in response to the salubrious climate that in summer attracted New Orleanians and other Southerners to the shore. Projection of the rail line along the Sound greatly enhanced communication and made it possible to exploit the fisheries of the Sound on a commercial basis, and later, some of the towns became established as exporting points for the timber resources of the coastal plain. These three resources were basically responsible for virtually all urban development until quite recently when efforts have been made to capitalize upon coastal position in relation to (1) the Cotton Belt, to export cotton, and (2) the Birmingham iron and steel district to establish a shipbuilding industry. Finally, the resort industry has profited by (1) position on a heavily used transcontinental highway, and (2) by being an intermediate stopping point for winter tourists from the Midwest in route to Florida. All of these factors of site and situation have in greater or lesser degree contributed to growth of each of the towns along the Sound.

CHAPTER II

LAND USE IN THE BAY ST. LOUIS- PASS CHRISTIAN SECTION

The Bay St. Louis-Pass Christian Section includes the four urban communities near the western end of the Sound. The Section is about 16 miles long and extends from the east end of Pass Christian in Harrison County to Clermont Harbor in Hancock County (Fig. 1). Not all of the 16 miles are land and not all of the land is urbanized. The Section is divided roughly in the center by the entrance to the Bay of St. Louis, which is about two miles wide, and between Clermont Harbor and Waveland a two mile segment of poorly drained land is unincorporated and undeveloped. Thus only about 12 of the 16 miles of shore are urbanized in greater or lesser degree.

Broad Pattern of Land Use

The broad pattern of land use in the urban places features (1) close conformity of the built-up area to the shorelines, and (2) nodal development away from the shore at the town centers. As is indicated by the shape of the corporate area, Pass Christian is a long, narrow town (Fig. 4). Throughout the major part of its length the built-up area is confined to property facing the beach. At the center of town for a distance of about a mile the land is built-up as far back as the Louisville and Nashville railroad, and on a few streets development extends in an irregular pattern beyond the railroad. At the east and west ends of town where the land is poorly drained development is fairly limited. At Henderson Point urban use of land is confined to a narrow zone facing St. Louis Bay.

Across the bay the eight miles of bay and Sound shoreline enclosed by the corporate limits of Bay St. Louis and Waveland is almost all built-up (Fig. 3). Here, however, some gaps in the pattern exist at bayous and other areas of poorly drained land. The largest gap exists at Felicity Bayou in the northern part of

Bay St. Louis. Development back from the shore is more pronounced in Bay St. Louis than it is in Pass Christian. In the northern two-thirds of the town the pattern of built-up land extends inland for varying distances up to a mile. In Waveland, the majority of the built-up area not facing the Sound is confined largely to two separate subdivisions near the center of the village south of the railroad.

Southwest of Waveland, as has already been mentioned, two large bayous preclude use of the land for about two miles along the shore. Beyond these bayous Clermont Harbor, a hamlet of possibly 100 inhabitants, occupies an outlier of well-drained land. The site of the community is a lobe of high lying land that extends from north of the railroad out to the shore. The shape of the built-up pattern conforms closely to the shape of the well-drained land, and, unlike the patterns of the other towns in the Section, the built-up area is narrowest at the beach front and widest near the railroad. Southwest of Clermont Harbor the land is all tidal marsh, and although the beach road and seawall run for more than a mile farther along the shore, poor drainage effectively precludes use of the land for residential purposes.

As was suggested in Chapter I the street patterns along which the built-up areas in Bay St. Louis and Pass Christian have expanded are a direct outgrowth of the original method of land subdivision. Sites of both towns were first occupied by the French, and in both places proprietary land grants were issued to individuals to aid permanent settlement. In keeping with the practice of allowing each property an outlet upon the shore, the grants were laid out perpendicularly to the water front. In Bay St. Louis five grants were surveyed. The central grant was centered on a point at the tip of the peninsula midway between the two bridges. The south margin was at Bookter Street and the northern boundary at Reese Street. The claim extended inland for 40 arpents¹ or a little less than a mile and a half. Disregarding the curvature of the shore, subsequent grants were laid out parallel to the central grant and were also 40 arpents deep. About 85 per cent of Bay St. Louis and a portion of Waveland is located within the area enclosed in these five rectangular grants. In time, subdivisions of the original claims were made along the

¹One arpent equals 11 1/2 rods or 184 feet.

long axis so that each property owner had an outlet on the shore. At the outset, of course, all settlement was confined to the shoreline, but as the town developed and expanded inland, the streets were laid out to conform to the property lines, and ran from the shore as far inland as was required resulting in a pattern of parallel streets. As cross streets became necessary to enable movement across town back from the shore, they were laid out in a haphazard manner since there were no predetermined property lines that could be followed. In Pass Christian the majority of the townsite was laid out and subdivided in a similar fashion and the same sort of parallel street pattern obtains. In the eastern part of the town and to some extent in western Waveland recently subdivided land conforms to the north-south lines established by county and township system of land survey.

Thus, whereas the gross pattern of the built-up area corresponds in its outline to the contour of the shoreline, the pattern of streets upon which the core of each town has developed conforms to the system of land survey inherited from the French colonial settlers.

Land in Residential Use

As in all urban places the primary use of land in these four communities is for housing. However, having developed since the beginning as summer resorts, the proportion of the built-up areas in residences in each case is relatively higher than it is in case of towns that have more varied economies.

The dwellings that house the population vary greatly in size and quality regardless of whether they are used seasonally or permanently. Many are large, palatial residences of wealthy New Orleanians, others are the common sort of small summer cottages, still others are small unkempt and ill-repaired dwellings of Negroes and seafood workers, while the majority are middle class single-family¹ residences of medium size and in fairly good repair.

¹Ratios of dwelling units to total structures shown on Table 11 suggests that duplex or multiple-family structures are common only in the larger towns.

Criteria for Classifying Residential Lands

In setting up a system for classifying land in residential use the following two guiding objectives have been borne in mind: (1) The same system should apply to the residential areas in all towns regardless of size or character of their economy, and (2) the system should be sufficiently broad to reveal the great variation in quality of housing that prevails in some of the towns along the Sound. The first principle has been adhered to enable comparison of residential land use in the several towns and, at the same time, to show how differences in quality of housing reflect the functional character of the towns and stress differences in their economic support. The reason for the second principle is self-evident. Despite the small size of the coast towns, there is a great range in caliber of residences within towns and from one town to another.

A third decision was reached rather early in the field investigation, namely, not to classify separately residences used seasonally from those used permanently. This conclusion was reluctantly accepted when it became apparent that most seasonal residences are in no significant respects unlike or distinguishable from permanent residences, and that for the most part the two types are closely intermingled and thence difficult to map separately except on a large scale that would depict individual residences. Hence the system of classification is one that measures quality of residential property and disregards manner of use.

Two primary criteria and two secondary criteria have been employed in the classification. The primary criteria are size of structure and condition of repair. The secondary criteria are age of structure and spacing or density of dwellings. Size and upkeep are of foremost importance because they are both fairly consistent measures of quality and both are easily observed. Age of structures is less reliable because it is not consistent. Many of the best houses are among the oldest, and a few new dwellings are very small and not well cared for. Spacing is likewise of less utility as measure of quality of residences because it does not in many instances correspond with size or upkeep. Use of lot size as a measure of quality is not satisfactory because the fairly common practice of using double lots in the poor residential areas and because along the beach front there is not every-

where a pronounced positive correlation between size of lot and size or quality of dwelling. Consequently, the secondary criteria have been used only as supplementary measures in cases where size and condition of repair alone are insufficient to form an opinion.

In applying these two sets of criteria to the residences along the Sound, five classes of residential property have been recognized. Each property was judged individually and placed in one of the five categories. The distributions shown on Figures 3, 4, 5, 6, 7, and 8 are generalizations based upon the dominant class of dwelling within areas as small as about a quarter of a city block.¹

Class I properties are characterized by large dwellings with 10 or more rooms. In most instances the lots are also large with over 100 feet of frontage. Both the dwellings and surrounding grounds are in first class repair and upkeep. While none of the properties in this category qualify as estates many of them are pretentious structures and in a number of instances the grounds have servant quarters at the rear of the lot. Ages of the houses vary greatly. Few are less than ten years old, and most of them, particularly in the older towns like Bay St. Louis, Waveland, Pass Christian, and Biloxi were built before the turn of the century.

Class II dwellings on the average are smaller than Class I. Few have as many as 10 rooms. The lots also tend to be somewhat smaller and while in general the condition of the property is good, upkeep is not equal to that of Class I residences. New dwellings that are above average size, even though on a relatively small lot, are included in this category.

The Class III residence is the average type of the area. They vary considerably in size. Old homes of above average size that are not in good repair fall in this category, just as do the relatively new one story "shotgun" bungalows that are so common, especially in Gulfport. As a rule lots are about 40 to 50 feet wide, consequently lawns are small and in most instances not well

¹Residential areas have not been set forth for two reasons: Most of the towns are too small to have well developed residential districts, and (2) the intermixing and juxtaposition of dwellings of distinctly different quality is a feature of nearly all the residential areas that warrants preserving within the limits imposed by the scale of the maps.

cared for. In most towns Class III dwellings are the predominant type.

Class IV properties have houses that average four rooms. Lots are generally small and regardless of size neither lot nor dwelling is well kempt or in good repair. This category includes new homes in the Negro sections. All, or nearly all of these houses are single story structures, whereas a fairly large proportion of the better grade houses have two stories.

Class V properties are substandard in most respects. Many do not have over two rooms; none has a lawn; most of them are unpainted and in need of major repairs. In many places, these flimsy shacks are closely spaced on 20-foot lots. None of them is new and they vary from Class IV types largely as a result of the advanced stage of deterioration. Most of them are occupied by Negroes and in Biloxi some seafood workers also dwell in structures of this type.

Apartment buildings are rare. Biloxi, Gulfport, and Pass Christian each have one and all of them are tourist-commercial enterprises.

Two towns, Biloxi and Pascagoula, have new housing developments (Figs. 6 and 8). The Biloxi projects are two story apartment buildings that have been built under a low-rent housing program of the United States Housing Authority for the permanent population. The project in Pascagoula consists of individual houses built by the United States Maritime Service for shipyard workers. All of these projects dwellings are designated as Class III residences.

Distribution of Classes of Residential Land

Class I.--It will be noted on Figures 3 and 4 that in all of the towns Class I property is restricted to the water front, and that they tend to be concentrated in some sectors of the beach and are absent or relatively uncommon in other sectors. In Bay St. Louis almost all of the best residential land faces the Sound; only a few high grade properties front upon the bay. Altogether only about a tenth¹ of the total shoreline, or 26 per cent of the Sound shore (south of the railroad bridge) is occupied by Class I

¹All data relative to beach front usage computed from MS maps.

residences. In Waveland one long section of the shore, which represents about a fifth of the total beach frontage, is occupied by Class I residences. In Pass Christian about a fourth of the six miles of beach exposure is occupied by high grade residential properties (Tables 8 and 9).

In Pass Christian these properties are distributed somewhat more widely and are more intermingled with Class II properties than is the case in Bay St. Louis and Waveland. Although no areally separate portion of the beach is purely Class I, in two sections Class I properties are predominate. Near the west end of town between Sherman and Pine Streets Class I frontage exceeds Class II frontage by a ratio of three to one. The other high grade residential section of the beach is in a similar location on the east side of the commercial section, where, between Seal and Menge Avenues--a distance of more than a mile--the majority of the residences is Class I.

Site qualities of the areas in Bay St. Louis and Waveland occupied by Class I are the best in either town for residential use. The surface is high and uniformly well drained. The dwellings are set back from the beach road (Front street) about a hundred feet or near the crest of the rise up from the waterfront. Moreover, the area is well wooded with live oaks and various other sub-tropical species. From point of its natural features it is the best residential land on the Hancock County shore and was pre-empted by wealthy residents at an early date. Furthermore, it is relatively close to the Bay St. Louis shopping center, another quality that adds to its value for residences.

In Pass Christian the high grade residences are also near to but not at the commercial section, and, although there is not much variation on the surface elevation, both these areas are well drained as compared to land nearer the western and eastern corporate limits.

In all three towns the ownership parcels along shore are large in comparison with the ordinary city lot. In Bay St. Louis, some lots extend inland as far as the railroad and a few extend the full 40 arpents, and lie, therefore, partially beyond the corporate limits. Length, however, is not a particularly distinctive feature of Class I properties as practically all the parcels in this part of town and in much of Pass Christian (except the center of the town) have not been subdivided latitudi-

nally.¹ In Pass Christian the average width of Class I properties is 150 feet² or about 50 per cent greater than the average Class II property width.

Class II.--As in all towns along the Sound, Class II residences are more common than Class I, and, as might be expected, most of them are also located along the shore. In Waveland 40 per cent of the three miles of beach is in Class II. In Bay St. Louis and Pass Christian just over a fourth of the respective beach fronts are in this category. Site qualities of the parcels in this category are essentially the same as for Class I properties, except near the center of Waveland where the level of the land surface does not exceed ten feet above mean sea level. In Bay St. Louis and Pass Christian a few Class II residences are not on the beach. In Pass Christian a seventh of the land in residential use on the north side of the Pass Road (Second Street) is in this class. The individual parcels are widely spaced and do not show up on Figure 4.

Class III.--In Pass Christian Class III residential land is not so extensive as it is in most towns along the Sound. Only 10 per cent of the frontage of the beach is in this category, and the remainder is scattered along Second Street with the main concentration near the center of town.

The paucity of middle class dwellings is a reflection of the economy of the community, i.e., it is a high-class summer resort that is partially dependent upon the seafood packing industry as a means of urban support. The resort dwellings are superior properties and the seafood working population is poorly paid and poorly housed. Thus the majority of houses are either above or below average quality.

In Waveland, Bay St. Louis, and Clermont Harbor middle grade residences are numerous. They take up almost all the occupied beach front not in Class I or II. In Waveland this amounts to a quarter of the three miles of shoreline and in Bay St. Louis

¹On Figures 3 to 8 inclusive, symbols for residential and other types of occupance forms on long beach lots have been limited to the shoreward ends, or occupied portions of the properties, and left open (unruled) on the inland sides to suggest that the parcels extend inland beyond the limits of the cross-hatch patterns.

²Computed from MS maps.

it is also a fourth of the total shore. Moreover, the majority of the built-up area in Waveland and Clermont Harbor that does not face the Sound is in this category. Back from the beach in Bay St. Louis medium grade residences are distributed in a disorderly pattern that shows no tendency to localization in any part of town. In all of the towns the smaller lot size is a characteristic difference between the medium and higher class residential properties. This is true even along the beach where all lots tend to be large. In Pass Christian, for example, the most common width for Class III beach lots is between 50 and 60 feet, whereas the average Class II lot is 92 feet (one-half arpent) wide.

Class IV.---As is true of all towns along the Sound, Class IV residences are located on less attractive sites away from the beach. This point is illustrated in Pass Christian where less than 1 per cent of the residential property facing the Sound is Class IV as compared to nearly 40 per cent on the north side of Second Street. The same sort of pattern is recognized in Bay St. Louis and Waveland. However, in Waveland the Class IV properties intermingle with Class III types, which are predominant, therefore, a relatively small amount of Class IV is represented on Figure 3.

Class V.---The area occupied by this category is large in Pass Christian as compared to Bay St. Louis or Waveland. Almost all the residences north of the railroad and a fairly high proportion of those immediately south of the right-of-way at the center of town are in this category. For example, 62 per cent of all residential land on Davis Avenue is Class V and nearly all of it is located north of the Louisville and Nashville tracks. Although the lots upon which these dwellings are built are quite small, most of them not over 25 feet wide, the total area in Class V appears to be about equal to the area in Class II. However, it should be noted that not over 25 to 50 per cent of the lots in the Class V areas are built-up. Thus, although the potential density of housing is high, the actual density is moderate. The large amount of land in Pass Christian occupied by these substandard dwellings indicates a large Negro population, which, as is shown on Table 4, is about 35 per cent of the total population, as well as a number of seafood workers.

In Bay St. Louis the small area occupied by low grade

residences is concentrated in one portion of the western part of the built-up pattern. It will be noted also that while the railroad right-of-way in Bay St. Louis does not form a line of demarcation through the town separating below-average from above-average residential parcels, as it does in Pass Christian, nonetheless, the bulk of the poorest dwellings are near the inner periphery of the built-up area.

The almost complete absence of Class V dwellings in Wave-land and Clermont Harbor is the principal feature that distinguishes them from all other communities along the Sound. It reflects their function as summer resorts and low Negro populations.

In general in all of the towns the pattern of distribution of different classes of residential property located on land not facing the shore cannot be explained on basis of the physical quality of the site. The quality of land back from the shore used by Class III dwellings is no better than that used by Class V. Nearness of the inland residences to the shore does not even appear to be significant. If it were, the pattern would have a greater tendency toward a banded arrangement with the best quality dwellings at the outer or shoreline band and the poorest quality dwellings aligned at the innermost band. The explanation of the pattern appears to be entirely a matter of precedence. If a neighborhood or subdivision starts as Class V it remains Class V; if it begins as Class III, it remains Class III.

Summer Residences

All of the communities in the Section, as we have seen, are primarily summer resorts. Landscape evidence of this function is not so conspicuous as in the case of highly commercialized resort towns like Biloxi where numerous hotels and tourist courts mark it at once as a resort community. In this Section, in contrast, almost all summer residents own their own homes, and as already indicated, the summer dwellings are not greatly unlike houses used by permanent residents. Therefore, at first blush, there is little to indicate the importance of the resort function.¹ Summer residences are mainly Class I, II or III struc-

¹The number of "vacant, not for rent or sale" dwelling units in Gulf coast towns is a good index of the resort function

tures. A few of the smallest are in Class IV. The chief differentiating factor in the quality of summer residences is size, as most of them are kept in a reasonably good repair.

In Pass Christian only 67, or 39 per cent, of the 172 beach residences are permanently occupied by the owners or by permanent lessees.¹ The remaining 61 per cent are summer residences occupied either by the owners or renters. Many of them are also rented in the winter, hence the term "summer" residence is used advisedly.

The pattern of distribution of summer residences along the shore in Pass Christian displays a relationship to the commercial section. Few of the residences near the commercial section are summer houses. For example, between Church and Flletas Avenues, a distance of about three-quarters of a mile, containing the commercial section, only one of the 37 residences is a summer home. All of the others, which are predominantly Class II or III types of dwellings, are occupied by permanent residents. From Flletas Avenue to Long Beach, on the other hand, 51 out of 73, or about two-thirds of the residences, most of which are high class properties, are summer homes. At the opposite end of town from Church Avenue to the western city limit, 85 per cent of the dwellings are summer residences. This arrangement would seem to indicate that both because of nearness to the business section and because they are less expensive, the dwellings near the center of town are more highly prized by local citizens than they are by summer residents, to whom neither cost nor nearness to shops is of much significance. Indeed, in the eyes of the summer resident, location of a summer home in the immediate environs of the commercial section is no doubt viewed as a distinct disadvantage. This pattern also stresses the fact that in Pass Christian the great majority of summer homes are Class I and Class II dwellings. It is this feature that marks the town as exceptionally high class residential summer resort.

as it measures the number of unoccupied seasonal residences. Three hundred eighteen or 79 per cent of the 403 "vacant, not for rent or sale" dwelling units in all urban places in Mississippi in 1940 were located in towns of over 2,500 inhabitants along the Sound. Twenty-five per cent of the total were in Bay St. Louis and 36 per cent were in Pass Christian. See Table 11.

¹Information courtesy of Mr. Ferrell, City Assessor.

The importance of nearness to New Orleans as the primary reason for Pass Christian's growth as a resort becomes apparent when it is realized that 85 per cent of the seasonal dwellings are owned and or occupied in summer by New Orleanians.¹ In winter the renters are parties originating largely from cities in the Midwest.

Since 1933 about a dozen summer homes have been built at Henderson Point along the bay shore north of the Louisville and Nashville bridge. That this area, which has a good beach (see p. 63), has been slow to develop is due mainly to (1) the fact that all the land is poorly drained, and (2) that until 1928 when the highway bridge was built, it was accessible to New Orleans only by railroad. Prior to 1925 no attempt was made to use the area for residences. In that year, the real estate boom that swept the Gulf Coast, prompted the Henderson Point Land Company to develop the area. Land north and south of the railroad was platted, a small craft harbor excavated between the highway and the railroad (Fig. 4), and broad drainage ditches dug. After the land boom subsided in 1926 and demand for residential sites returned to normal, no attempt was made to use any of the subdivision until 1933 when the mayor of New Orleans built an expensive summer residence on the bay front north of the highway bridge. Subsequently a few other less costly summer residences were constructed along the shore. As can be seen from Figure 4 the only area exploited thus far is close to the bridgehead. Farther inland east of the drainage ditch, the low-lying lots have no value for summer residences, and the land farther north has a less attractive beach and is not provided with a road leading from the highway.²

In Bay St. Louis the ratio of beach dwellings in seasonal use to those used permanently is lower than it is in Pass Christian.³ Out of 123 shoreline dwellings only 42 per cent are summer

¹Ibid.

²One reason advanced to explain why this north beach area is unused is the fact that the bank that owns the land refuses to act as a real estate development agency and won't sell the shore sites without selling all the marshland back from the shore. Source: Mr. A. E. Lang, Pass Christian, realtor.

³In 1940, one hundred and three dwelling units in Bay St. Louis were "vacant, not for rent or sale" as compared to 146 in Pass Christian. Sixteenth Census of the United States, 1940: Housing, Vol. I, Part 1 (Washington: Government Printing Office), pp. 787-88.

residences; the others are in use the year around. This is due in part at least to the following conditions: (1) Bay St. Louis is a larger town with more business and professional people who can afford beach property; (2) much shore property is owned by New Orleanians who commute to work;¹ and (3) over 50 per cent of the water frontage faces the Bay which is a less desirable place for a summer home than the land fronting upon the Sound.

Distribution of summer residences is similar to the pattern in Pass Christian in that most of them are not near the commercial section. In keeping with the pattern of classes of dwellings, the older, more expensive summer homes are on the choice sites near the south end of town facing the Sound, and the newer, less expensive houses are at the northern end of town facing the Bay.

Until quite recently all summer homes were confined to lots fronting on the beach. In 1939 one small subdivision on Bay View Court (second street north of Ulman Avenue), between Front Street and Second Street, was opened and a few Class III summer residences constructed. This is the first instance in Bay St. Louis of cheaper "second line" property being used for summer residences. Heretofore, Bay St. Louis, like Pass Christian, has been entirely a resort for wealthy people who could afford expensive sites, large lots and costly dwellings.

In Waveland summer residences are more common than permanent dwellings. It is estimated that at least 80 of the 120 residences along the three miles of shoreline within the corporate limits are used only during the summer. In the subdivisions situated between the beach and railroad right-of-way approximately 100² of the dwellings are summer residences. In fact the only

¹Pass Christian is about five miles farther by train from New Orleans than Bay St. Louis. This additional distance appears to be the main reason why Bay St. Louis has a small permanent commuter population while Pass Christian has none. The difference in distance is apparently not offset either by the fact that Pass Christian has had gas heating for homes for several years, whereas Bay St. Louis did not have it until 1939. It is pointed out that the gas supply encouraged a number of summer residents in Bay St. Louis to use the summer houses during the winter season thereby increasing the commuter population. Information from Mr. Grady Perkins, City Clerk, Bay St. Louis.

²Both figures are based upon field observation in which whether a dwelling appeared to be occupied (in March) was the

residential area in the town that is not largely composed of summer cottages is north of the railroad on Jefferson Davis Street.

Variations in the caliber of summer homes is in accord with the distribution of classes of dwellings shown on Figure 3. The largest, oldest, and best repaired dwellings are along the beach on the higher land, toward the Bay St. Louis boundary. Toward the east end of the beach where the land is somewhat lower, and hence originally less attractive, especially before the sea wall was complete, the dwellings are smaller. In all of the built-up areas back from the shore the summer residences are really summer cottages that vary from about four to six rooms. Because the land occupied by these subdivisions does not face the beach and because it is lower lying--much of it less than 10 feet above mean sea level--it is cheap. As a result it was priced to sell to people in the middle income groups who could afford only inexpensive summer houses. The location of these summer cottages therefore is similar to those recently built in the Bay View subdivision in Bay St. Louis. Since 1936 about 40 such cottages have been constructed in Waveland. The single largest concentration is along the two streets east of Coleman Avenue. A second concentration is located back from the shore on Nicholson Avenue. In the west end of town new cottages are widely scattered.

As can be seen from Figure 3 the pattern of the used areas back from the shore is laid out in such a way as to avoid the less well drained land. However, in a few places cottages are built on land that tends to be wet during the winter and following other periods of exceptionally heavy precipitation. Dwellings that occupy these areas are built on foundations six or eight feet high. The stilt-like foundations not only keep the dwellings off the damp surface but they also tend to improve ven-

principal criteria employed to distinguish between permanent and seasonal use. This was supplemented by interviews. The estimates are believed to be conservative. According to the Census of housing, 447, or 37.9 per cent of all dwelling units in Beat 5 outside of Bay St. Louis are classified as "vacant, not for rent or sale." If such dwellings are all summer homes, it would seem likely, in view of the fact that the majority of all residences in Beat 5 outside of Bay St. Louis, are in Waveland and Clermont Harbor, that well over 50 per cent of all dwellings in Waveland are summer homes. See, Sixteenth Census of the United States: 1940. Housing, op. cit.

tilation. Although no example of such was noted among the summer cottages, in some of the older and more expensive houses along the Sound, a "well" is provided near the center of the building, to allow air to pass upward into the structure. This arrangement is a rudimental form of air conditioning.

The high proportion of land in residential use in Waveland is due, as we have seen, to the fact that it is essentially an extension of Bay St. Louis, and that the business establishments in Bay St. Louis are capable of providing for nearly all of its needs in line of retail goods and personal services. That the town is mainly summer resort is due to (1) nearness to New Orleans and (2) the fact that the land is not needed or suitable for any other use.

Since long before incorporation in 1888¹ the village has been a summer resort for New Orleanians, and Wilkinson suggests that its growth up to that time had depended upon the increase of population in New Orleans.² To a lesser degree, Bay St. Louis and Pass Christian have also been dependent upon population increase in New Orleans. However, because Waveland has never had any other means of support, its permanent population has not increased greatly. Although the permanent population jumped from 431 in 1920 to 768 in 1940 (Table 8), it is still very small compared to the summer population which is estimated to average about 2,500.³

Clermont Harbor is a particularly fine example of the influence nearness to New Orleans has had upon summer resort development in this Section of the Sound margin. The village site, as we have seen, is the westernmost tract of inhabitable terrain along the Sound, and therefore, is nearest to New Orleans. Apart from a small sawmill no basis exists for community development except metropolitan demand for resort space. Consequently, practically all the land is in summer homes. The residences, which are of fairly uniform size and in good repair, average somewhat

¹Mississippi Department of Archives and History, Jackson, W. P. A. Historical Research Project MS, Hancock County, unnumbered.

²R. A. Wilkinson, The Gulf Coast (Passenger Department, Louisville and Nashville Railroad Co., 1886), p. 21.

³Source: Mr. Grady Perkins, Bay St. Louis, City Clerk.

older than those in Waveland--a fact that indicates that the community was built-up at an early date and that few lots are available for new housing.

Land in Commercial Use

In Table 1 it was shown that trade is a relatively unimportant function in Bay St. Louis and Pass Christian. In both places between 13 and 14 per cent of all gainfully employed are engaged in retail and wholesale activities. These figures represent 232 persons in Bay St. Louis and 168 in Pass Christian. We have also noted that the trade function of Waveland is exceptionally insignificant. The only other commercial concentration of note in the Section is a group of tourist-commercial establishments at Henderson Point.

Bay St. Louis

Although Bay St. Louis is only 25 per cent larger than Pass Christian, it has almost twice as many retail and wholesale outlets. This commercial supremacy is derived partly from the fact that it draws much rural trade because it is the only large town in Hancock County and seat of the county government, and partly because it serves Waveland as well. Whereas Pass Christian, in contrast to the position it once held in antebellum days as an important commercial town for a large area, now has almost no trade connections with the back country farmers. For the most part, the inland market north of Pass Christian has shifted to Gulfport.

Bay St. Louis has one major and three minor concentrations of commercial establishments (Fig. 3). The major concentration is laid out in the form of an inverted T, with a closely spaced alignment of retail and service establishments on both sides of Front Street representing the base of the figure and an alignment along Main Street forming the vertical member. One of the minor concentrations faces the south side of the railroad station, the second is on the beach at Washington Street, and the third is an alignment along Ulman Avenue.

The stature of the main business district may be judged by the presence of two banks, two garages, one men's clothier, one shoe store, three drug stores, a small department store, three

electrical and auto supply outlets, a bakery, a 5 and 10 cent store, three food stores, several eating and drinking establishments, and a theatre. The remainder of the firms are service stations or professional and personal services. From this list the small size and immaturity of the business district is apparent. It is also apparent from the distribution and design of the buildings. Nearly all are single story frame structures. In most instances each shop is a separate structure. Examples of buildings built flush with one another are rare. Although this is the main business district many lots and a few buildings are vacant, and some dwellings are interspersed among the stores. The most singular feature of the district is the fact that nearly all shops on the shore side of Front Street are built out over the water and are supported at the rear by piles from 12 to 18 feet high depending on the height of the roadway above the water line. This arrangement emphasizes the fact that Front Street is the main thoroughfare in town and a better place for a business establishment than Main Street which is just as central but much less heavily traveled. The risk of exposure to damage by waves and high water during storms¹ is offset by the advantage of accessibility.

Movement of traffic along Front Street is also responsible for the only significant example of functional localization noted within the main business district. All cafes, taverns and service stations are on Front Street; none is on Main Street.

The group of business firms along the street at the south side of the Louisville and Nashville depot includes two groceries, two cafes, two taverns, a dry goods store, an elective and auto supply firm, and a bakery. This shopping district is a product of pre-automobile days when the railroad was the chief means of transportation and a prominent factor in commuter traffic. It also developed partially as a result of the fact that the Louisville and Nashville for many years used Bay St. Louis for some of its engineering and accounting offices. The latter functions have since been transferred to New Orleans and for the past 10 to 15

¹On three occasions--1893, 1909 and 1915--the business district along the beach was severely damaged by tropical storms. Mississippi Department of Archives and History, Jackson, W. P. A. Historical Research Project MS, Hancock County, unnumbered.

years the railroad has not carried many commuters to New Orleans. Consequently these business establishments have lost trade and the fact is reflected in the number of vacant buildings and their shabby appearance. In general the buildings appear to be much older than those on Main and Front Streets, a feature that would seem to indicate that it was the original commercial center of the town. The older appearance, however, is due to the fact that the area has never been swept by fire or damaged by storms. In addition to the three severe storms mentioned earlier, large parts of the main business district have been rebuilt following fires, the last of which, in 1907 resulted in damage estimated at a quarter of a million dollars.¹

Location and development of the minor concentration of business firms at the foot of Washington Street, which includes a tavern, auto supply and sales outlet, grocery, realty dealer, cafe, and new theatre, is much more difficult to explain. It is too far removed from the Main Street to be accepted as an extension of the main business district. It appears to have commenced as a collection of neighborhood stores and expanded recently because it is on Front Street and centrally located with regard to the population pattern of the Bay St. Louis-Waveland area.

All business establishments along Ulman Avenue, which carries U. S. 90 across town, are tourist-commercial enterprises. They include the Weston Hotel located at the approach to the bridge, five service stations, two cafes, and two small tourist camps. Following a fire in 1923 the hotel was moved from its original site on Court Street to its present location so as to be near the terminal of the ferry that carried traffic across the bay before the highway bridge was built. Although the need for a hotel to accommodate travelers, stranded in town at night when the ferry did not operate, was removed after building the bridge, the hotel has profited by the subsequent increases in tourist traffic. During winter and summer seasons a high proportion of the hotel guests are vacationists.

Both tourist courts, one of which is located about 400 feet west of the corporate limit, have been built since 1937, and during the period when most of the new tourist courts elsewhere along the Sound were being constructed (Chapter III). Due to the

¹Ibid.

fact that they are located on the highway and away from the beach their trade varies with the normal flow of tourist traffic, and does not swing up sharply in summer as does the trade for the courts on the beach in Harrison County.

Paucity of tourist-commercial services in Bay St. Louis is due mainly to the fact that the town is only 45 miles from New Orleans, therefore, is not in a strategic position to capture tourist trade. New Orleans is undoubtedly either the destination or starting point for a very significant fraction of all tourist traffic along U. S. 90. Bay St. Louis is too near to the metropolis to be selected by many westbound tourists as a likely stopping point, except during Mardi Gras and the Winter Sports Festival when the overflow from the crowded city normally uses all the tourist facilities that Bay St. Louis possesses.

Besides the main shopping section and three minor groupings of commercial firms, there is a number of neighborhood stores scattered about the city in a pattern that corresponds generally to the pattern of the residential areas.

Bay St. Louis has four wholesale establishments including three oil bulk plants and a dealer in feeds, seeds, building material and some types of groceries. The oil and gas wholesalers are located in a cluster along the railroad tracks southwest of the depot. The feeds dealer is near the railroad on Toulme Street. These companies are the only wholesale firms in the Bay St. Louis-Pass Christian Section and all of them, except one oil company, which serves a few stations in western Harrison County, confine their business to retail outlets in Hancock County. For most all other types of goods, except meats, local retail merchants depend upon New Orleans distributors. The two meat and some of the oil and grocery distributors in Gulfport include towns at this end of the Sound margin in their trade areas.

The scattered pattern of land in commercial use in Bay St. Louis results fundamentally from the fact that the town does not have a central point of focus for automobile and pedestrian traffic. The main traveled street is Front Street which runs transverse to U. S. 90, the main traveled route entering town. The railroad station and the courthouse are not placed near to one another, nor are they on either of the principal thoroughfares. The resulting pattern of commercial firms is a broken one that reflects the localizing influence of each of these centers of interest.

Waveland

For a town that has nearly 800 permanent residents and a summertime population of 2,500, Waveland has an exceptionally small number and variety of retail outlets. Three shops including a combination restaurant and service station, a grocery and an ice dealer are located near the Louisville and Nashville station on Waveland Street. A grocery, drugstore and two service stations are located midway between the beach and railroad on Coleman Street, and a grocery, restaurant and service station are situated at the inland end of Coleman Street north of the railroad. In a general way the distribution indicates that they are essentially neighborhood stores and services for benefit of the permanent population. As has already been mentioned, to a large degree residents of Waveland, both permanent and seasonal, depend upon Bay St. Louis for many of their everyday purchases.

Clermont Harbor

Clermont Harbor has three groceries and one service station to provide for the staple needs of the permanent and seasonal inhabitants, and the Clermont Harbor Hotel which once catered to summer vacationists. Situated on low-lying land at the edge of the lake in the southwestern part of the built-up area, this three story frame structure is conspicuous for its size, location and unkempt appearance. Erected in 1915 it operated successfully for several seasons, but in recent years it has not been open. Although it is closer to New Orleans by at least five miles than any other hotel along the Sound, the isolated location and distance from any source of entertainment or diversion has been an obstacle to development of a reliable clientele. Moreover, since automobiles have replaced the railroad as the principal means of commuting, New Orleanians seeking hotel accommodations have patronized the higher class hostels and tourist courts farther east along the shore.

Pass Christian

In orientation and relative location in the town pattern the main commercial section of Pass Christian is similar to the

main commercial section of Bay St. Louis. Instead of being an inverted T, the commercial section is U-shaped with the beach road (U. S. 90) forming the base of the figure and Market and Davis Avenues forming short uprights. This arrangement in which the shops are rather widely spaced and separated by vacant lots and lots in other uses, is in no sense a commercial core; rather it is a pattern of commercial alignments.

The main alignment of shops and services is along the beach road, where for a distance of a third of a mile between Davis and Market Avenues, commercial firms occupy about 20 per cent of the frontage on both sides of the road.¹ While establishments on the beach road also serve the permanent population, the emphasis is on shops and services for travelers, such as service stations and restaurants.² On Market and Davis Avenues, in contrast, the shops are of the sort required by local residents, such as bakeries, groceries, and hardware stores, to mention a few.

Besides the shops on the three streets in the U-shaped pattern, a number of small outlets, also for the local market, are spaced at wide intervals along Second Street in the center of town.

The pattern as herein outlined is a long established one. The only current change that may be detected is a movement toward the beach road and away from Second Street. This is indicated by (1) the number of vacant stores are on Second Street or Market and Davis Avenues, and (2) the new business structures on the beach roadway.

As has already been stated, the resort function in Pass Christian has always been evidenced mainly by summer homes, yet the town has always had, since before the Civil War, at least one large hotel for seasonal visitors. In 1940, three hotels and one tourist court were the only tourist-commercial residences in town. One of the hotels, the Grey Castle, was not in operation. The

¹The beach road in the neighborhood of Market Avenue is about 175 to 200 feet from and about 10 feet higher than the seawall which leaves ample space for buildings on the south side of the road and little chance of damage by storms.

²A telegraph office is maintained solely to serve the non-resident population. Local business alone would not support it. Courtesy, Mr. Wharton, local merchant.

other two, the Reed and the Miramar, depend upon both winter and summer trade.

The tourist court is located near the east end of town in the area that is sparsely built-up and where the surface lies slightly below the level of the beach road and is generally not well-drained. The operator of the camp traded property in New Orleans for the 264-foot lot that extends back to Second Street, and, not knowing what else to do with it, built a residence and 10 cabins in 1938. The fact that Pass Christian has only one tourist court, which it got more or less by chance, is due primarily to (1) disinterest on part of wealthy people who own all good sites in any form of tourist-commercial establishment, (2) high price of beach property, (3) isolation of cheaper sites at either end of town from local population, shopping and entertainment centers, and (4) nearness to New Orleans which tends to reduce demand by transients for tourist court space in Pass Christian just as it does in Bay St. Louis.

Henderson Point

The principal tourist-commercial development in the vicinity of Pass Christian is at Henderson Point (Fig. 4).¹ The Inn-By-The-Sea, a fashionable winter resort hotel, occupies part of a 75-acre tract at the corner of the peninsula south of the Louisville and Nashville right-of-way, and a tourist court, two road-houses, a restaurant and service station are situated on the south side of U. S. 90 where it approaches the bridge. A second tourist court, located at the south side of the railroad right-of-way adjacent to U. S. 90, has been closed since the highway overpass, which was built in 1938 to eliminate the grade crossing, cut off all chance of easy access to the court. As mentioned earlier, there are also a few summer homes along the bay shore near the highway bridge.

¹The real estate boom in 1925-26 produced another resort on the northern shore of St. Louis Bay, northwest of Pass Christian (Fig. 1). In 1926 a 200-acre tract on the only section of undulating and well-drained land facing the bay was selected as the site for a five story 180-room hotel and 18-hole golf course. The project, called "Pine Hills," was completed, but except for the golf course, has never operated as it was intended. The buildings and grounds are kept up at a considerable expense. (Cf. Edgewater Gulf Hotel and Gulf Hills subdivision, Chapter IV.)

By all odds the major site attraction at Henderson Point for tourist and residential use is the quality of the beach. In contrast to the Sound shoreline, where degradation processes erode the beach, and hence needs the protection of a seawall, the tip of the peninsula is a zone of aggradation. Shore-wise currents moving westward along the strand slow up as they enter the Bay of St. Louis causing sand to accumulate. The accumulation is sufficient to assure a good beach from the Point proper for a distance of several hundred yards northward beyond the highway bridge. The amount of deposition naturally decreases with distance from the mouth of the bay. This feature plus the fact that the land along the bay shore toward the northern corner of the peninsula is very low have discouraged use of the northern portion of the shore. While the commercial establishments on U. S. 90 derive a lot of trade from transients, the primary source of revenue is from people who come from New Orleans and the towns along the Sound to use the beach.

Besides the attraction of the beach and functional convenience of location near to one another, the zoning restriction imposed by the Henderson Point Land Company, which developed all of the property along U. S. 90 between the Sound and the bridge, appears to have forced commercial enterprises to locate along the approach to the bridge. The company prohibited all commercial enterprises along the Sound front, the north-south segment of the highway, and along the beach on both sides of the bridge, leaving only the approach to the bridge for commercial use.¹

Although no two of the luxury hotels along the Sound provide the same facilities and attract the same types of clientele, the Inn-By-The-Sea is a reasonably good example of that sort of enterprise. First attempt to use the site, which is only about five feet above sea level, was made in 1924 with the establishment of an inn. Between 1924 and 1933 two different inns and a night club occupied the location. All depended upon local trade and none was successful. In 1933 the property was acquired by a wealthy New Orleanian who planned to develop it more or less as a hobby as well as a place for summer residence. Expensive improvements were accomplished and by 1940 the grounds included a hotel with sleeping capacity of 90, several guest cottages, em-

¹Mr. A. E. Lang, Real Estate dealer, Pass Christian.

ployees' dwellings, greenhouse, heating plant, waterworks, a nine-hole mashie course, extensive gardens, beach and yacht pier.¹ The improvements also included a seawall of uncemented rock along the south shore of the property.² These extensive improvements have enabled the hotel gradually to develop a good business both in winter and summer.

Like all the other winter hotels along the Sound, the best season is from January through April when accommodations are booked well in advance by guests originating principally from Chicago and other large cities in the Midwest. About 75 per cent of the winter guests are repeat customers. During the summer and autumn week-end business predominates with most of the guests coming from New Orleans and other southern cities. Despite its nearness, however, New Orleans trade represents an exceptionally small fraction of the total revenue chiefly because (1) the hotel is expensive, and (2) most wealthy New Orleanians own or lease dwellings along the Sound. At all times during the summer a certain amount of business is gained from the people who use the beach, which is open to the public. The guest cottages were built mainly to accommodate this trade.

Compared to other clusters of tourist-commercial establishments elsewhere along the Sound, the development at Henderson Point is exceptional for two reasons: (1) it is located in the midst of a portion of the Sound margin where commercial tourist rooms are uncommon and where use of land for resort purposes has long been confined largely to private summer homes, and (2) it has developed in response to a particular natural site feature that is not found along other parts of the Sound shore. In view of the excellence of the beach that it did not develop earlier is due entirely to poor drainage and isolated location. The drainage problem has been only partially remedied, but the highway bridge has brought the area within easy reach of the New Orleans demand for resort facilities.

¹Information from Mr. Merrick, Manager.

²The seawall built by the County to help maintain the foundation of U. S. 90 extends only a short distance beyond the point where the road turns inland (Fig. 4).

Land in Communal Use

Land in communal use includes all space devoted to public and semi-public activities such as government, religion, recreation, education and related functions. As can be seen from Figures 3 and 4 the total surface used in these ways in the Bay St. Louis-Pass Christian Section exceeds the area devoted to either manufactural or commercial enterprises. This is particularly true of Bay St. Louis and Waveland where extensive areas are allotted to schools and summer camps. The amount of space utilized by these institutions far exceeds local requirements and is basically a reflection, just as are the summer homes, of the metropolitan influence of New Orleans.

Land Used for Institutions

A total of 14 parcels of land in this Section are utilized for schools; seven of the parcels are in Bay St. Louis; four in Pass Christian; one each in Waveland and Clermont Harbor; and one outside the corporate limits at the southwest edge of Waveland (Figs. 3 and 4). Ten of the institutions are locally supported and attended by pupils from the immediate vicinity; the other four are extra-local establishments that draw financial support and students largely from outside the local communities. Three of the latter are situated in Bay St. Louis. It is these schools that have given Bay St. Louis a long-standing reputation as an educational center.

The two most prominent are St. Stanislaus College for boys and St. Joseph's Academy for girls which occupy large parcels of land facing the beach near the center of town. The college, a combination grade and high school, has been functioning since 1854. Only the eastern half of the 455-foot parcel, which extends inland to the 40-arpent line, is used by the school, and a portion of that has been deeded to the Louisville and Nashville Railroad Company. The enrollment is normally about 350. A number of the students are from local addresses, but the majority come from New Orleans and other nearby towns.¹

¹Although the number varies greatly, in some years as many as 30 students from Caribbean countries have been enrolled at St. Stanislaus. Information from Brother Leonard.

The academy is also a boarding and day school extending through high school. In addition, it operates a convent. The student body is drawn from approximately the same area as the college. This, too, is an old institution having functioned several years prior to the Civil War before it was finally chartered by the Mississippi legislature in 1871.

The third school of extra-local importance is St. Augustine Seminary on Ulman Avenue near the bridge. It is a Catholic school and one of the few in the country where Negro boys are trained for the priesthood.¹

The fourth school of special significance is Gulfside, an accredited interdenominational summer school for Negroes located west of Waveland. The plant, which includes over 500 acres of land, a number of buildings, and a mile and a quarter of Sound frontage, is the only stretch of teach in Mississippi owned and controlled by Negroes.² Only a small part of the property is improved (Fig. 3).

Schools supported solely for benefit of local children in this Section of the Sound are of four types, public schools for whites and for Negroes, and parochial schools for whites and for Negroes. Public schools for whites include the new (1928) grade and high school on Ulman Avenue in Bay St. Louis, and another on Second Street toward the western end of Pass Christian. Other grade schools are located in Bay St. Louis, Waveland, and Clermont Harbor. One of the two public grade schools for Negroes is situated north of the railroad in Pass Christian, and the other is in the Negro quarter at the western corporate limit of Bay St. Louis. Catholic children in Pass Christian attend the parochial grade and high schools which are located on separate parcels near the center of town. Most Catholics in Bay St. Louis are trained at the college or the academy. The only parochial school for local Negroes is one on Nicaise Street in Bay St. Louis operated by Fathers of the Divine Word for students from kindergarten through high school age.

The small infirmary for Negroes operated in conjunction with St. Augustine Seminary is the only hospital of any sort in

¹Mississippi, A Guide to the Magnolia State (New York: Viking Press, 1938), p. 300.

²Ibid.

the Section. The white population depends upon New Orleans or Gulfport for hospitalization.

Because these towns are relatively small and a high proportion of the population is Catholic, they do not support many churches of different denominations as compared to Gulfport, which is much larger and has a larger Protestant and Negro populations (Chapter III). The distribution of churches conforms pretty well to the more densely built-up sections.

All communities except Clermont Harbor have at least one cemetery. Bay St. Louis has a Catholic and a Protestant cemetery, and Pass Christian has a Negro and a Catholic cemetery.

Land Used for Recreation

As already suggested the large area utilized for recreation is due primarily to space devoted to summer camps. Pass Christian has only one privately operated summer camp for girls which is located near the east end of town. In Bay St. Louis there are two; one is a privately operated camp for New Orleans boys and the other is operated by a Jewish charitable organization. Both are old establishments that occupy choice beach sites near the Waveland-Bay St. Louis corporate limit.

In Waveland, near the foot of Waveland Street, Holy Cross Villa functions not only as a recreational center but also as a place for religious activities. It also exists as result of sponsorship of a New Orleans church group.

Except for the athletic field, which is part of St. Stanislaus, not much land in Bay St. Louis is used for local recreational purposes. Pass Christian has a large yacht club on the beach near the east end of the small craft harbor, and in Bay St. Louis there are three small lodges. The only areas in either town that can pass as parks are the parkways at the south side of the two railroad depots. This feature of the land use pattern is not surprising, as the entire beach area is more or less public and sufficient to supply the recreational needs of local population. In Bay St. Louis, at the insistence of property owners, the seawall was not extended along the bay shoreline between a point one block north of the highway bridge and the seafood factory. Thus, this sector of the beach remains in its natural form and is open to the public despite the fact that all the frontage is privately owned. None of the beach at Bay St. Louis and Wave-

land, however, is as broad and sandy as that at Henderson Point, consequently it is not so intensively used.¹

Land Used for Governmental Purposes

Governmental functions and services, as in most small towns, are of little significance from the land use viewpoint. They are of a purely local nature and require a minimum of land.

All three incorporated places have city halls and post offices located near the functional centers of the communities. Bay St. Louis and Pass Christian each have fire stations and waterworks combined within the same building. Pass Christian provides fire protection for Henderson Point and Bay St. Louis offers similar service to Waveland. As we have already noted, Bay St. Louis is the county seat. The courthouse has been located at its site on Main Street since 1867 when it was transferred from Gainesville, in the western part of the county. In large degree it is the function as headquarters for the county administration and its resulting effect upon rural trade that makes Bay St. Louis a larger and more diversified commercial center than Pass Christian.

Land in Industrial Use

The unimportance of industry in the occupation structure of this Section of the Sound already has been emphasized. From a land use viewpoint this function is even less significant than it is in terms of employment. These towns are nonindustrial communities principally because they are too small to support a variety of factories producing for the local market, and because they offer no particular advantage to firms which process local raw materials. Consequently, only four industrial plants are present--two seafood packing establishments, an ice plant and a sawmill. Dunbar-Dukate Packing Company is located in Pass Christian; Marine Foods Company is in Bay St. Louis; the sawmill is in Clermont Harbor, and the ice plant is near the railroad station in Bay St. Louis (Figs. 3 and 4).

¹Hancock County owns and operates a dredge for the purpose of keeping the beach in good condition and repairing erosion damage to the seawall foundation.

Seafood Packing

Both of the seafood packing plants, which specialize in canning oysters and shrimp, are built upon made-land. Dunbar-Dukate is situated on a huge pile of oyster shells that extends out into the Sound from the foot of Market Street. Marine Foods company is located upon a similar shell pile in Bay of St. Louis near the mouth of Felicity Bayou. These artificially made promontories have been necessary in order to place the plants at the edge of navigable water. Neither site is ideal for a seafood plant because they are exposed and the water is often rough. Sheltered anchorages are needed to prevent damage to boats and plant facilities during storms and smooth water is an aid while boats are unloading. These disadvantages appear to be the main reasons why seafood plants have never become more numerous along this part of the Sound, despite the fact that they were introduced to the area at an early date.

Dunbar-Dukate, the first seafood packing concern to be opened along Mississippi Sound, was built in the 1870's,¹ and by 1897 a seafood plant was in operation at Bay St. Louis.² These early establishments appear to have been located near the west end of the Sound mainly to be accessible to the large oyster reefs located about three miles off shore from Pass Christian and the mouth of St. Louis Bay. Although these reefs have become a relatively less important source of oysters, and shrimp, which are caught in Gulf waters, have become much more important, Dunbar-Dukate company has operated steadily ever since it started. It operates its own fishing boats and the consistency with which it has performed has enabled it to maintain an adequate supply of labor. Oyster opening and shrimp cleaning are hand-operated processes, and no seafood plant can begin to function without the guarantee of an adequate number of plant workers (Chapter IV).

The history of seafood packing in Bay St. Louis has been characterized by instability and long periods of inactivity. Most

¹C. H. Townsend, Statistics of the Fisheries of the Gulf States, Report of the Commissioner, U. S. Commission of Fish and Fisheries, 1899 (Washington: Government Printing Office, 1900), p. 141.

²Ibid.

of the time since before 1900 the seafood plant (the town has never had more than one at a given time) has been located on an unprotected pier at the foot of Washington Street. The present site of Marine Foods was developed in 1932 by a turtle soup factory that was unsuccessful and the location was acquired by the seafood plant in 1935.¹ While the new site is quite satisfactory from point of its physical characteristics and there is little danger of damage by storms or high water, the company operates under the disadvantage of an unreliable labor supply and shortage of fishermen. It is necessary, for instance, to contract with boat operators in Biloxi to supply most of the raw materials. While these two conditions do not preclude successful operation, they do make it more difficult, and Bay St. Louis is clearly a much less satisfactory place for seafood processing than is Biloxi, which has a large reservoir of plant workers and fishing crews, as well as the most ideal plant sites (Chapter IV).

Other Industries

The Clermont Harbor sawmill is a small outfit that employs less than 10 workers the year around. It is the last of a number of sawmills that once dotted western Hancock County during the early part of the century when much land was covered with heavy stands of pine. Its business now is confined to milling timber trucked in from widely scattered places in the western part of the county.

Bay Ice Company, located near the railroad station, is representative of the ice companies that operate in towns along the Sound. It supplies two markets--the household market, and the fishing boat market. Shrimp boats utilize much ice to refrigerate the catches until they can be delivered to the packing plants.

The Louisville and Nashville railroad yards and buildings in Bay St. Louis are more extensive than they are in Pass Christian or most other towns along the Sound. This is due to the fact that until 1931, the division accounting offices and some of its engineering and maintenance functions were performed at the Bay St. Louis station. All of these functions have been transferred to New Orleans and the extra yard and building space is now idle.

¹Courtesy of Mr. Moore, Manager.

CHAPTER III

LAND USE IN THE GULFPORT SECTION

The Gulfport Section is the central, non-peninsular segment of Harrison County's Sound margin. Measuring about eleven miles in length along the shoreline and extending inland to a maximum depth of two miles, it includes four communities, Gulfport, Long Beach, Mississippi City, and Handsboro. Each of the communities developed originally as separate and functionally independent urban centers. Handsboro and Mississippi City, both unincorporated and including a total of about 2,000 inhabitants, were ante-bellum villages contemporary in their initial development with Biloxi and Pass Christian. Long Beach started its growth after the Louisville and Nashville Railroad was put through in 1870, and in 1940 had a population of 1,481. Gulfport originated still later as southern terminus and port for the Gulf and Ship Island Railroad. Stimulated by rising timber exports the town grew rapidly. Within a decade after incorporation in 1898 it was the largest town and main business center in the Section. By 1940 it had a population of 15,200 which represented over 80 per cent of the total population of the four communities. The relationship of the four communities to one another and the dominating position of Gulfport are brought out in the following consideration of the broad pattern of land use.

Broad Pattern of Land Use

As shown on Figures 1 and 5, Long Beach, Gulfport and Mississippi City face the Sound; whereas, Handsboro, located north of Mississippi City, faces Bayou Bernard. Except for Handsboro the overall pattern of land in urban uses is fairly well-balanced and exhibits a measure of symmetry. The pattern has developed in response to two factors: the Illinois Central Railroad and the attraction of the beachline. The principal development has been along the beachline with a lesser development along the railroad. In outline, then, the built-up area forms a low, broad-

based triangle with the railroad representing the perpendicular dimension and the shore forming the baseline. Handsboro lies just beyond the northeast limit of this imaginary triangle, but is connected to it at northeastern Gulfport and at the shore in Mississippi City by "strassendorf" developments of residential land.

The main body of used land within the triangle surrounds the intersection of the Illinois Central and the beachline in the south central part of Gulfport. Outward from this nucleus, zones of built-up land spread east and west along the shore and northward along the railroad. In Gulfport and adjoining parts of Long Beach and Mississippi City, the beach zone extends from the water front inland as far as the Louisville and Nashville right-of-way. Farther out from the center the zone narrows to thin, ribbon-like extensions that follow the beach boulevard to the eastern and western limits of the Section.

North of the Louisville and Nashville, built-up land is largely confined to Gulfport or the central portion of the triangle. The pattern is spotty. Knots and alignments of used land are separated from one another by gaps of vacant terrain of various widths. The used areas are larger and more numerous east of the perpendicular than they are west of it. Near the center of Gulfport, land lying adjacent to the north side of the railroad is rather fully occupied by urban forms, but in Long Beach and Mississippi City only a small fraction of it is in urban use. Farther north one broken alignment of urban forms follows a dune ridge of well-drained land upon which the Pass Road to Biloxi is located. The western end of the alignment is west of the Illinois Central right-of-way and continues in an east-northeasterly direction across Gulfport to the eastern corporate limit. Handsboro is, in part, a continuation of this poorly defined alignment. North of this alignment in Gulfport a shallow poorly drained depression at least two blocks wide at its narrowest point, separates the remaining large block of used space from the southern part of the city. This outlier constitutes the apex of the triangle. The balance of the corporate area to the east, north and west of the outlier is in no permanent urban use.

The bulk of the land in urban use is for housing. This is particularly true of the smaller three communities which have no industrial functions and whose commercial activities are pretty

well confined to a small number of retail shops handling staple needs. In Gulfport, on the other hand, space used for industry, commerce and communal purposes represents a respectable fraction of the total used area. Bearing in mind Gulfport's origin as a rail terminus and seaport, it follows logically that most commercial, transportation and industrial uses of land are localized along the rail line that sparked initial urban development. Not all land along the Illinois Central line are in such uses; indeed, much of it is idle, but that zone, beginning at the northern corporate limit and following the Illinois Central across the city onto the man-made harbor at the edge of the Sound, is the belt in which commerce and industry take up a majority of the utilized space.

The framework of streets upon which the four communities have grown conforms closely in outline to the gross pattern of land in urban use. No extensive subdivisions complete with streets lie totally unused. Premature platting has been widespread, but development of subdivisions has lagged behind--remaining in reasonable step with demand for building sites. Withal the general conformity of street and built-up patterns, much idle property exists. The pattern of scattered dwellings in groups of two's and three's attests to this fact, as does the need for streets linking isolated built-up neighborhoods with one another, with the main shopping centers, and with arterial routes.

Arrangement of streets in the Gulfport Section sharply portrays the contrast between the checkerboard pattern that stems from the grid survey system of property subdivision, and the parallel pattern inherent to areas subdivided during French and Spanish occupation.

Two early Spanish claims in this part of the Sound, each enclosing about one square mile, antedated American annexation of southern Mississippi territory (West Florida) in 1810.¹ These claims, located in the southwest corner of Gulfport and adjacent Long Beach, are indicated by closely spaced streets running perpendicular to the water front and by the paucity and irregular spacing of cross streets. Farther west, in the central part of Long Beach, the pattern conforms to the Spanish grants in that

¹Mississippi, A Guide to the Magnolia State, Federal Writers' Project of the Works Progress Administration (New York: Viking Press, 1938), p. 69.

streets extend inland perpendicularly to the Sound, but uniformly spaced cross streets have been added. In the western half of Long Beach, the last and least developed part of town, streets and property boundaries are oriented north and south. Likewise, all land in Mississippi City and Handsboro appears to have been subdivided after the beginning of American jurisdiction as all streets and property lines conform to range and township survey lines. In southeastern Gulfport, south of the Louisville and Nashville tracks and to some extent north of them, a third type of street pattern obtains. In this area all streets lead away from the shore on a north-south bearing, whereas the cross streets run parallel to the Sound and the railroad. This system is a compromise to eliminate the series of dead ends that would exist at the right-of-way if the cross streets were oriented east and west. The dead end effect along the railroad "fault-line" prevails in the central part of Gulfport where the checkerboard system was instituted from the northern corporate limit southward across the city to the water front. The remaining, and by far the largest part of Gulfport has a checkerboard pattern of streets (most of them unopened), but in some subdivisions the spacing of easements does not conform precisely with the spacing in "Original Gulfport."¹

In only two residential subdivisions have the promoters departed from the monotonous and conventional pattern of straight streets: Southmoor subdivision in eastern Gulfport and Broadmoor in western Gulfport both have curvilinear street systems.

Besides the checkerboard pattern, the most singular feature of the street system in Gulfport is width of easements (Fig. 5, Inset). The framework of 80-foot boulevards and the intermediate streets, also wide in comparison to Biloxi's "passage ways," is the foremost mark of urban individuality and basis for the oft-repeated statement that Gulfport was laid out on a plan of "unobstructed expansiveness."

Land in Transportational and Industrial Use

Since Gulfport developed as a railroad terminus and since

¹Subdivision bounded by 28th Street on the north, 20th Avenue on the east, and 34th Avenue on the west, that was the townsite as originally platted in 1887. When the city was incorporated in 1898 its limits were essentially as they are now.

transportation by rail and water for many years constituted the sole basis for community support, and since the Illinois Central right-of-way is the spine of the urban pattern, discussion of land in transportational and industrial use precedes consideration of commercial, residential and communal land utilization.

Railroads

The Gulfport Section and specifically Gulfport itself is the only urban part of the Sound margin directly served by two major railroads--the Louisville and Nashville and the Illinois Central. The Louisville and Nashville is the trunk line that runs from the Ohio River cities through Birmingham, Mobile and terminates in New Orleans. The Illinois Central is the branch line that joins the New Orleans-Chicago main stem at Jackson. Both lines are single-tracked.

The Louisville and Nashville right-of-way cuts across the Gulfport Section along its long, east-west axis and lies parallel to the Sound shore and back from it about 1,500 feet. Thus it passes through Long Beach, Gulfport and Mississippi City. Hanksboro has no rail line connections. Apart from interchange tracks at the intersection with the Illinois Central, the Louisville and Nashville provides no spur lines. Passenger stations are maintained at Long Beach and Mississippi City, as well as the Union Station at Gulfport.

This railroad has had only a slight influence upon growth of the three communities it serves in this Section of the Sound. It was instrumental in developing truck farming in the Long Beach area during the latter part of the nineteenth and early part of the twentieth centuries.¹ But apart from serving as a packing and loading point and gaining retail business from the increased

¹ The climax of truck farm production was reached in 1921 when 330 cars of vegetables were shipped over the Louisville and Nashville in the early spring season. In following seasons the industry suffered from hard frosts, unseasonably dry weather, and later, from vigorous competition of new and more economical truck producing areas in the Louisiana delta country which quickly usurped the best markets. Under these successive setbacks the Long Beach production languished and is now only a semi-subsistence truck and fruit farming area that fails to fulfill local demands. See T. G. James, "A History of the Mississippi Gulf Coast from November 11, 1918 to November 11, 1928" (Unpublished Master's dissertation, Dept. of History, Mississippi University, 1935), p. 180.

farm population, Long Beach netted no important or permanent gains from the rural development.

The Illinois Central, on the other hand, presents quite a different picture. It enters Gulfport at the north edge of the city, passes across town on a straight course, and terminates in two sets of spurs, one on each of the piers that form the Anchorage Basin. In contrast of the Louisville and Nashville, the Illinois Central has many sidings and spurs. East Pier and the one operated by the railroad has 18 spurs with a storage capacity of about 300 cars.¹ West Pier also has several spurs with a somewhat smaller storage capacity. Besides the spurs on the piers, a set of short sidings serve the Mississippi Power Company plant, wholesale and warehousing organizations on the mainland west of the Illinois Central and north and south of the Louisville and Nashville right-of-way. Two short spurs each about three blocks in length, lead out 22nd Street east and west of the mainline. A single longer spur farther north runs to the Mac-Smith Garment company and on to the Mississippi-Gulfport cotton warehouse. The Gulfport Fertilizer plant, situated at the west side of the main line in the northern part of town, also has spur connections to the mainline.

Besides the spurs, Union Station and associated baggage and freight houses, the only railroad properties are the repair shops and offices. The repair facilities are fairly extensive and occupy parts of two city blocks along the east side of the mainline at 22nd Street. The office building, called the Gulf and Ship Island Building, is on 13th street at the east side of the right-of-way (Fig. 5, Inset). This building is a three-story structure and one of the largest office buildings in Gulfport.

The size of the repair and office facilities dates back to the period from 1900 to 1925 when the Gulf and Ship Island line used Gulfport for general offices and maintenance department. After the Illinois Central system acquired control of the Gulf and Ship Island in 1925, the need for such spacious facilities in Gulfport was eliminated and the functions were assumed by similar establishments more centrally located on the mainline. While this

¹Board of Engineers for Rivers and Harbors, Corps of Engineers, U. S. Army, The Ports of Gulfport and Pascagoula, Mississippi, Port Series No. 19 (Revised 1934; Washington: Government Printing Office, 1935), p. 23.

transfer of functions was a setback to the employment structure of Gulfport, it did not alter notably use of land for railroad facilities. Nowadays the Illinois Central employs two to four men in Gulfport to accomplish minor repairs and uses only four rooms in the Gulf and Ship Island office building.

The difference in roles played by the Illinois Central (and its predecessor, the Gulf and Ship Island) and the Louisville and Nashville lines is further illustrated upon comparing size of right-of-ways. The Louisville and Nashville has a narrow easement about 80 feet wide, whereas the Illinois Central easement is about 175 wide in the narrowest part. Trackage occupies most of this broad strip from 22nd Street southward where most of the sidings and switch tracks are located. North of 22nd Street, except for the single track, most of the space in the broad right-of-way is unused, as is most of the space in blocks bordering the right-of-way in the central and northern parts of town. Unwanted for housing and not required by industry or commercial enterprises, it lies idle.

Port

The port at Gulfport is an essential and integral part of the rail transportation system and is the key structure in the development of the community.

The harbor proper is an artificial anchorage basin measuring 2,640 feet by 1,320 feet and maintained at a depth of 26 feet.¹ Two piers, one on either side of the Anchorage Basin, are the main commercial terminals. West Pier, operated by the Port Commission, has 1,800 feet of berth space. East Pier, owned and operated by the Illinois Central, provides about 3,400 feet of berth space. All berth space is confined to the inner margins of the piers as shoal water prohibits use of the outer margins. Extensive storage space is available on both piers. The mouth of the basin is protected from storm waves by a mole that juts out at an angle from the tip of West Pier. The north or shore end of the basin is shallow and used only by small craft such as fishing boats and Coast Guard vessels.

Development of the harbor was undertaken by the Gulf and Ship Island Railroad Company in conjunction with building of the

¹J. J. Martin, Traffic Manager, Gulfport Port Commission.

railroad from Jackson to the Sound. Essentially, there were two elements to port development: (1) the harbor at the mainland and (2) the channel across the Sound to the natural anchorage basin located in the lee of Ship Island, one of the chain of islands that mark the gulfward margin of Mississippi Sound.

Under the original plan, as might be guessed from the name of the company, it was proposed to extend the railroad from the mainland eleven miles southeast across the Sound to Ship Island anchorage.¹ Hitherto, Ship Island anchorage and Horn Island anchorage, the latter located south of Pascagoula, had been used by all deep-draft vessels engaged in loading lumber from points along the Mississippi Coast. Lighters transported the cargoes from mainland to shipside. By the extension of the railroad, the company envisioned the elimination of lightering and consequent double-handling of cargoes. Fortunately for Gulfport, the impracticability of building and maintaining a railroad across the Sound, which varies in depth up to 19 feet, was realized early and the idea abandoned before construction commenced. Instead of a railroad trestle, a channel was dredged and an inner harbor developed at the mainland. That change in plan gave Gulfport a harbor at the edge of the townsite. The channel and harbor were dredged to a depth of 19 feet when the port opened for business in 1901. All of the development up to that time, when the federal government assumed responsibility for maintaining the channels, had been accomplished by the Gulf and Ship Island Company at a cost of about \$1,600,000.²

At the outset of port operation only East Pier was used as a terminal; West Pier was merely a narrow protective mole. The harbor was not built flush with the shoreline. The shore end of the basin was placed about 1,500 feet out from the mainland so as to avoid deep dredging in shallow water and to allow ample space at the shore end of the basin for port facilities. About a third of the space between the mainland and the Anchorage Basin was taken up at an early date by a shallow fresh water³ timber stor-

¹Mississippi, A Guide to the Magnolia State, op. cit., p. 196.

²Board of Engineers for Rivers and Harbors, Corps of Engineers, U. S. Army, The Ports of Gulfport and Pascagoula, Mississippi, op. cit., p. 2.

³The teredo worm (a shipworm) attacks timber stored in salt water.

age basin which was connected to the Anchorage Basin by flume used in transferring timber to shipside. The harbor was laid out at an azimuth of about 140 degrees to conform with the course of the channel across the Sound and allow for easy entrance of vessels into the anchorage.

Storage Facilities

In virtually all ports the largest proportion of pier and wharf space is occupied by storage facilities. Although Gulfport is not a general cargo port, nor a point where a variety of goods accumulate for export, its total warehouse space in 1940 was over 694,000 square feet¹ or the equivalent of about 16 acres of enclosed floor space. The space is contained in six separate groups of warehouses with capacities varying from 24,000 to over 250,000 square feet. Three of the groups are located on the piers and the others on the mainland. Most of the warehouses are fairly new; about two-thirds of the total space has been provided since 1934.

Recent development of warehousing facilities has been pursued in order to change Gulfport's shipping economy from one based almost entirely upon lumber export to one of broader, better-balanced flow of import and export commodities. Throughout the duration of Gulfport's existence lumber has been the major item in port trade. The quantity and trends in the early lumber export business are shown in Table 6. The peak year in lumber export was 1911 when it is alleged that Gulfport exported more pine lumber than any other port in the world. The Gulf and Ship Island Railroad Company's annual reports, which were published only through 1916, make scant mention of materials other than lumber. From the 1916 report, one may conclude by inference that 12 per cent of the net registered tonnage of bottoms entering and clearing the port carried cargoes other than lumber. The materials are not itemized. One may surmise that in preceding years lumber was even more pre-eminent than in 1916.

After 1916 port trade was subject to periodic fluctuations beginning with marked lows during World War I, when shipping was short, again during the Depression, and finally in 1938-40. A

¹Computed from ibid., pp. 27-28 and information from port traffic manager.

TABLE 6

LUMBER EXPORTS FROM GULFPORT, 1902-1916*

Year Ending June 30	No. Vessels Loaded	Net Reg. Tonnage	Lumber in Feet (B. M.)
1902.....	21	10,567	13,044,237
1903.....	56	55,409	47,232,765
1904.....	198	243,845	193,275,300
1905.....	273	279,337	225,990,750
1906.....	270	297,641	250,034,000
1907.....	278	352,378	306,374,000
1908.....	236	312,463	254,744,000
1909.....	214	281,832	212,787,000
1910.....	248	359,345	276,127,000
1911.....	277	408,719	342,214,956
1912.....	266	345,551	304,189,000
1913.....	254	342,640	303,165,200
1914.....	239	346,610	271,705,000
1915.....	135	159,095	113,029,400
1916.....	131	149,930	134,188,000

*Source: Gulf and Ship Island Railroad Annual Report, 1916 (published by the company), p. 8.

fair recovery was made during the prosperous middle 1920's and again after the Depression, but succeeding upswings were progressively weaker and the general trend in trade was downward. At no time has the export trade equalled that of 1911. Imports have always consisted principally of bulk fertilizer ingredients with tonnage amounting to around 10 to 15 per cent of all port traffic. Surprisingly enough lumber was the chief item in export trade consistently up to 1933, even though heavy cutting of pine on the coastal plain had been completed by 1920. This point emphasizes the fact that Gulfport's immediate hinterland, producing little but trees, yields no other exportable surplus. From 1924 to 1933 lumber ran about 85 to 95 per cent of all exports and variation in lumber movement therefore was responsible for the great fluctuations in total traffic. Such complete reliance upon a single item of trade meant that if lumber export lagged, all

port activity was affected. Since 1933 lumber has been absolutely and relatively less significant. In 1939 it was only 46 per cent of all exports, and in 1940, when a shortage of bottoms was again being felt, it dropped to 8 per cent of export trade.¹

The folly of attempting to operate profitably a port dependent upon a single resource such as lumber is readily apparent. The fluctuations and general downward trend in port business prompted the Port Commission, when it was formed in 1930, to begin to provide facilities and accommodations for storing and shipping materials other than lumber. The new warehouses are the landscape manifestations of its efforts.

Some provision was made for storage of goods before the Port Commission began its coordinated program. The Gulfport Creosote Company, whose main plant is located about two miles north of Gulfport, built four creosote oil tanks on East Pier before 1920. A reconverted freight shed belonging to the Gulf and Ship Island railroad and located between 13th Street and the port, has long been used for storage of bulk fertilizer materials. In 1923 the rail line constructed transit sheds at the outer end of East Pier to house fertilizer stuffs, asphalt, sugar, and other commodities.

In 1930 the Port Commission leased a section of East Pier and erected two transit sheds to provide added space for lumber, sugar, rosin, and miscellaneous packaged goods. Four years later the Mississippi-Gulfport Compress and Warehouse Company opened for business on a site in the northern part of town (Fig. 5). The building has about 235,000 square feet of floor space and a capacity for 85,000 high-density compressed bales. The compress was incorporated with the warehouse function as an additional attraction for cotton producers and dealers in south central Mississippi who lack compress services and who might well use Gulfport as a shipping point. About the same time another cotton warehouse was built at the corner of 13th Street and 29th Avenue for long-term storage of cotton. These efforts to create storage space culminated in 1937 in a rebuilding of West Pier with the aid of

¹All data in paragraph based upon information in (1) Board of Engineers for Rivers and Harbors, Corps of Engineers, U. S. Army, The Ports of Gulfport and Pascagoula, Mississippi, op. cit., and (2) U. S. Army Engineers, "Commercial Statistics, Mobile, Alabama District, 1940" (Mobile: U. S. Army Engineers, 1941). (Mimeographed.)

Public Works Administration funds at a cost of about \$1,150,000. Twelve modern warehouses with a total floor space of about 250,000 square feet are included in this group. The spacing and design are such as to allow easy and rapid transfer of goods to and from ship or railroad cars.

Gulfport is a small port,¹ and economy of movement and interchange of goods is a major factor in determining the amount of business it can draw. Sandwiched in between such large general cargo ports as New Orleans and Mobile, Gulfport cannot hope to compete for trade on equal footing with the larger ports even granted parity of freight rates. The only possible place to gain advantage in face of intense competition in the wider tributary area, must be in the port itself in form of superior arrangement, management and services that can be passed on to the shipper in form of reduced port charges.

Regardless of how successful the new port management policies and services eventually become, they have already effected considerable transformation in the pattern of land use. Whether a similar transformation in the occupation structure, as a result of increased port activity, will raise the number engaged in transportation above the present 11.5 per cent of all gainfully employed is dependent upon a number of factors beyond local control. At any rate, the port now has ample facilities to handle all foreseeable increases in shipping trade.

The Airfield

Gulfport has one small municipal airfield. The tract contains 160 acres and is located west of the Illinois Central tracks near the northern corporate limit. In the vicinity of the airfield the surface is nearly level, and, being part of the low terrace that marks the northern limit of the shallow depression that runs across the northern part of the city, it is well-drained. Only the southwestern corner of the tract slopes noticeably toward the depression. The grass surface and good drainage make it the only naturally ideal area in the city for a landing field. All but a few acres have been sown to Ber-

¹In 1940 Gulfport's total waterborne tonnage was a sixth that of Pensacola and a thirtieth that of Mobile. Computed from U. S. Army Engineers, "Commercial Statistics, Mobile, Alabama District, 1940," *ibid.* For an analysis of Mobile's waterborne trade, see Edward Ullman, *Mobile, Industrial Seaport and Trade Center* (private ed.; Chicago: University of Chicago Libraries, 1943).

muda grass and the field is serviceable for small planes throughout the year.

Like the other towns along the Sound, Gulfport is on the flyway used by the Southern Airlines entering New Orleans from the east. There are no scheduled landings; it is used by commercial companies only in emergency. Its use now is confined to occasional chartered flights and for local recreational flying activities. The airfield, then, though large in area, is not an important link in the local transportation system and contributes very little to the effective functioning of the community.

Manufacturing Plants

As has already been pointed out, Gulfport is the only community in the Gulfport Section in which much land is used by factories. Handsboro, once the site of several sawmills and an iron foundry, now has only an ice plant and gravel pit and because both of these are in part retail organizations, they qualify as much to be called "commercial" as to be called "manufactural." Long Beach and Mississippi City have no manufactural enterprises now, and so far as can be discovered, never have had.

Gulfport does not have a clearly defined industrial district. Nearness to the Illinois Central tracks is the only common denominator of location that applies to a majority of the establishments. Absence of a definitive manufactural pattern can be ascribed to the small size of most plants and to the fact that most of them produce for a local market and use truck transportation. Plants of such description normally have no locational problems in a town that has much vacant land; any of a dozen sites may be equally good from point of efficient operation.

The Gulfport Fertilizer Company and the Mac-Smith Garment Company, the only large factories, are located near the Illinois Central right-of-way in the northern part of the city. The small plants including three bottling works, two tile factories, a mattress plant, power plant, ice, seafood canning and boat-repair plants are fairly well scattered, and only in the most general way does their pattern of distribution show an affinity for the Central Business District.

The Gulfport Fertilizer Company is the only factory established in Gulfport as a direct outgrowth of the city's function as

a foreign trade port.¹ Constructed in 1904, two years after the port opened, as a combined cottonseed oil extraction and fertilizer mixing plant, it is the oldest manufactural enterprise in the city. The cottonseed mill failed in 1910² for want of a reliable supply of raw material. Although the first years of the company's existence were marked by irregularity of operation, since 1917 it has continuously produced a variety of commercial fertilizers for agricultural communities in southern Mississippi. The market area for the formulas is determined primarily by competition from other large fertilizer mixing plants located in New Orleans, Memphis, Tupelo, and Mobile. Within the area served, the McComb County truck farming district, located southwest of Jackson, is an important consumer.

All raw materials except the sulphates, which come from Texas by rail, are received through the port. Thus, presence of this factory, although it does not consume all the fertilizer materials entering the harbor, is an important reason for the stability of Gulfport's import trade.

Not all of the 32 acres in the property are occupied by factory buildings. Much of it is idle land, and a small part is devoted to dwellings for employees. The houses were built when the plant was erected as a convenience to employees and to help assure a supply of labor. In 1904 the plant was well removed from the built-up part of town. Moreover, the town was growing rapidly and housing was in great demand. Since that time development of the city has eliminated the need for company housing. Most of the employees now live in nearby residential neighborhoods within or north of the corporate limit.³

Although this plant shows up conspicuously on the land use map (Fig. 5) and constitutes a major part of all land in in-

¹Three factories on or near Bayou Bernard about two miles north of Gulfport make direct use of the port. Barnes and Davis Lumber Company exports some lumber. Phoenix Naval Stores (extraction from stumps) exports rosin, and the Gulfport Creosote Company imports creosote oil.

²Mississippi Department of Archives and History, Jackson, W. P. A. Historical Research Project MS, Harrison County, unnumbered.

³During the spring months of maximum operation, many of the laborers are transients, of which Gulfport always seems to have a plentiful supply. Statement from plant manager.

dustrial use, it is not equally important in the economic structure of the community. According to the 1940 census the factory employed 64 persons,¹ or less than 7 per cent of all those engaged in manufacturing. This figure, however, is misleading as it represents employment in April, one of the months of peak employment in southern fertilizer plants.² During the slack season less than a dozen persons are employed, and the average monthly employment, therefore, is well below 7 per cent of all gainfully employed persons in manufacturing.

In addition to the fertilizer plant, the company operates a cotton gin. The gin was constructed in 1935, two years after the Mississippi-Gulfport compress and warehouse were built and during the period when the Port Commission was redoubling effort to establish Gulfport as a point for cotton export. It has not proven to be a sound venture. Whereas the compress and warehouse might well profitably serve a critical need for compressing and storage of cotton, the gin, located so far from cotton producing counties, each year has failed to obtain half the bulk cotton required for profitable operation.³

The Mac-Smith Garment Company factory occupies the major part of four city blocks at the southwest quadrant formed by intersection of the Illinois Central right-of-way and 28th Street. It began operating in 1937 and employs over 60 per cent of Gulfport's workers gainfully employed in manufacturing.⁴ Men's shirts are fabricated from goods imported from New England and Piedmont cotton mills. Large chain stores and mail order firms, such as Montgomery Ward and Company, contract for most of the output.

¹Sixteenth Census of the United States: 1940. Population, Vol. II, Part 4, op. cit., p. 304.

²Employment in all fertilizer plants in Mississippi during July is only 17 per cent of peak employment in March. Sixteenth Census of the United States: 1940. Manufactures, 1939, Vol. II, Part 1, op. cit., p. 803.

³Statement from plant manager, personal interview.

⁴This factory, then, is solely responsible for Gulfport's classification as a "balanced diversified" type of functional community. Before 1937 the community was a trade type with employment in manufacturing less than 20 per cent of aggregate employment. See Chapter I, and Kneedler, op. cit., p. 30.

Introduction of the garment factory into Gulfport's economy came as a direct result of the Industrial Act of 1936, passed by the state legislature. The act, designed to "balance agriculture with industry," authorized municipalities to issue bonds to be used in constructing plant facilities, and to relieve some types of industry from the burden of paying ad valorem taxes for a period of five years.¹ Gulfport had a spinning mill built in 1929 for a company that failed to materialize, and which was admirably suited for use as a garment factory. Aside from the building and relief from taxes, by moving to Gulfport the company capitalized upon an untrained but large and potentially competent supply of cheap labor. The employees, 85 per cent of which are women, are recruited principally in Gulfport and other nearby communities. To a degree, this industry, like the Jackson County Woolen Mills (Chapter V), is parasitic in that it takes advantage of location in a community that hitherto offered no opportunities for employment in industry to white women. The parasitic feature tends to minimize the factory's contribution to overall population growth, but nonetheless, the weekly payroll of about \$15,000 broadens the resource base and adds more than any other single enterprise to the economic stability of the city. Within the short period of three years the developmental influence of the factory is already apparent. The small outlying commercial district along 25th avenue at 28th Street has expanded, and five rental bungalows have been erected nearby. New housing east of 25th Avenue in northern Gulfport also reflects the economic benefits of the textile plant.

All other manufacturing units in Gulfport are small in terms of space requirements and number of employees. Collectively, they produce a diverse array of commodities, some for an extra-local market, most of them for the local market. They are not activities that tend to mark the city as industrial, and in toto, they add little of distinction to the functional nature of the community.

Those that produce for extra-local markets include the power plant, mattress factory and seafood canning plant. Of these, the power plant is the largest and most critical element in

¹Mississippi, A Guide to the Magnolia State, op. cit., p. 112.

the local industrial complex.

The carbo-electric plant of the Mississippi Power Company, a subsidiary of Commonwealth and Southern, covers about a quarter of a city block on 29th Avenue at the beach (Fig. 5, Inset). Besides being one of the standby power units in a system that serves 150 communities in southeastern Mississippi, it is the company headquarters. The office function largely accounts for the fact that three times as many people in Gulfport work for "utilities" as in Biloxi.

At first blush it would appear that Gulfport, situated at the southern edge of the area served by the company, is a poor location for the general office. The choice, however, is more logical than it appears. When the Mississippi Power Company was formed in 1925 by consolidation of six small companies that together served the coastal strip from Clermont Harbor to Ocean Springs, Gulfport was centrally located. Subsequent expansion by absorbing other small independent power companies has of necessity been toward the interior and Gulfport became peripheral rather than central in relation to the service area. From a management point of view peripheral location is not a handicap; the general office functions can be performed quite as efficiently from one major town in the system as another. From point of power consumption, Gulfport is fairly central; because of its population and industries the Gulf Coast is one of the largest power-consuming areas in southern Mississippi. Moreover, the amenities of life along the Sound are so superior to any inland point on the coastal plain, that other factors of successful operation being the same, Gulfport is easily a superior choice for main offices. As between selecting Gulfport or Biloxi as original headquarters, there was no question. In 1925 Biloxi was still without bridges across the bay and Gulfport was far more accessible.

The mattress factory is a small, privately owned and seasonally operated plant located at the east edge of the Central Business District. Raw materials are imported from widely scattered sources and the mattresses are sold principally in Mississippi, Alabama and Louisiana.

The seafood packing concern, located at the northwest corner of the Anchorage Basin, is essentially the same sort of an organization as the seafood companies in Biloxi, even to point of not operating every season. It has to rely upon Biloxi fishermen

and boats for procurement of raw stuffs as Gulfport has never supported a fishing colony. Plant labor is recruited locally. For the seafood industry as a whole it is a marginal producer and in Gulfport's industrial economy it is likewise marginal.

All other manufacturing units in the city produce for local consumption. These plants include one ice cream company, an ice plant, two tile factories, and three beverage bottling works, and a boat repair company. The tile producers use much space for storage and each occupies about one city block. Both are located in the residential area west of the Central Business District and north of the railroad right-of-way. The ice, ice cream and one of the bottling works are on 13th Street, west of the Illinois Central in the wholesale section. The other two bottling works are widely spaced; one in the west end and the other in the north end of town. The boatbuilding company occupies a part of the northern margin of the Anchorage Basin. Like the boatyards in Biloxi, it employs only a few workmen and the production schedule fluctuates with an unstable demand for repair work on pleasure and fishing vessels. The boat and seafood plants are the only industries in Gulfport that depend directly upon the Sound and its resources. This emphasizes the fact that Gulfport's relationship to the Sound and the Gulf of Mexico is almost entirely in the role of a shipping point. To Gulfport the Sound has always been basically a medium of transportation and place of recreation, and not a source of raw materials.

The overall picture of industry in Gulfport would not be complete without comment upon two non-functioning elements in the pattern. A defunct oil refinery and the building of an automobile factory, both small by modern standards for such enterprises, still remain. They are monuments recalling to local residents the boom period following World War I when extensive plans were under way to make Gulfport a center of industrial as well as commercial activity. The refinery, located along the Illinois Central north of the garment factory, operated for a few months in 1921. The automobile factory turned out some experimental steam car models in 1921, shifted to production of oil stoves, and closed down in 1923.¹ These projects, along with a short-lived tire manufacturing outfit, represented an industrial expansion based entirely

¹James, op. cit., p. 180.

upon hope. Apart from the two buildings they contributed nothing of lasting value to the city. A portion of the refinery periodically has been used for oil storage. The frame building of the car company has served several purposes. It has been site of the county fair, a boxing arena, Federal Relief Project mattress factory, and a high school gymnasium.¹

Land in Commercial Use

The greatest concentration of land in commercial use in the Gulfport Section is obviously in Gulfport (Fig. 5, Inset). As was pointed out in Chapter I and by Tables 1 and 2, Gulfport is the chief business town along the Sound. Fifty per cent of all retail and 63 per cent of all wholesale sales in Harrison County in 1939 were consummated in Gulfport, which has only 30 per cent of the county population.

The gross pattern of commercial establishments consists of a Central Business District, small shopping centers in each of the other communities, and scattered retail and service establishments in outlying parts of Gulfport. From a functional viewpoint, there are three main types of commercial firms: (1) retail, (2) wholesale and (3) tourist. In the areal arrangement of these functional types much overlapping exists, but because of their space requirements and nature of their patronage, they tend to be grouped separately. Hence the following discussion of commercial land use is presented under three headings: (1) Central Business District, (2) outlying business establishments, and (3) tourist-commercial establishments.

Central Business District

The Central Business District is an area about five blocks square that is centered approximately upon the intersection of the two railroads (Fig. 5, Inset). The core of this district is the retail shopping center which occupies the southeast quadrant formed by the railroad intersection. The remaining three quadrants are occupied by a heterogeneous collection of retail, wholesale, storage and manufactural establishments. Storage and manufactural functions have been dealt with earlier. In this section attention

¹ Ibid.

is directed to retail shopping and wholesale functions.

Retail establishments.--The retail core is fairly sharply delimited. The north edge is bounded by the Louisville and Nashville right-of-way, and the west edge by the Illinois Central tracks. The preciseness of these boundaries is amplified by the fact that 26th and 27th Avenues do not cross the Louisville and Nashville and 14th Street does not cross the Illinois Central. The southern boundary along 13th Street is almost as clear-cut. Thirteenth Street is about 80 feet wide from curb to curb--a barrier in itself--and the south side of the street is not devoted to stores or services similar to those on the north side. The eastern boundary is the least precise. In general, 24th Avenue forms the limit of the solidly built-up business section, east of which much land is in public or residential uses. As thus defined, the retail core is comprised of six blocks.

Intensity of land use within the retail core follows no set pattern. In three of the six blocks all lots are built-up. In the other three, each has at least one vacant lot. One such lot is a parking space; the others are idle. Height of buildings varies from one to seven stories. Aside from the seven story and a five story building, all others have three stories or less. It is roughly estimated that half of the remaining buildings are two stories in height, a fourth one story, and a fourth three story structures. The majority of the buildings regardless of height are constructed of brick.

Use of space within buildings follows the standard pattern for commercial cores of similar size. With few exceptions retail sales and service outlets are confined to the ground floor level. Use of upper levels is more varied. About 40 per cent is used for offices, 20 per cent for hotel rooms, and the balance used for private residences, storage in conjunction with ground floor retail firms, or is vacant.

Localization of functions is not a characteristic of the retail core. Gulfport is too small to require, for reasons of convenience, a pronounced segregation of shops and services, or types of shops and services. However, some evidence does exist for designating 14th Street as the principal business street. The bank, leading apparel shops, all jewelers, best department store, and two tallest office buildings front upon this street. Furthermore, all lots are built-up and all ground floor space is

used. Part of its superiority is due to the fact that it is the longest street that crosses the heart of the retail section, and that it carries most local and much through traffic. Heaviest local and through traffic converges upon the intersection of 25th Avenue and 14th Street. Traffic from the north on U. S. 49 enters Gulfport on 25th Avenue, and 14th Street carries U. S. 90 in the eastern part of the Central Business District (Fig. 5, Inset). Although U. S. 90 is diverted from 14th Street to 13th Street at 24th Avenue, local traffic from the east destined for the retail section or U. S. 49, follows 14th Street. Therefore, the intersection of 25th Avenue and 14th Street is the hub of traffic circulating in and through the Central Business District and point from which motorists start looking for parking space. As a result it tends to become the hub of pedestrian traffic as well, and both flows enhance the value of business sites near the corner. It may be reasoned that concentration of traffic adds value to space on 25th Avenue as well as 14th Street, and it does, but 25th Avenue is a short street that crosses the railroad, and space along or near the railroad is less desirable for many business uses. The deteriorating influence of the railroads upon shopping space is evidenced by the amount of unused store space along 27th Avenue across from the Union Station.

Not all of the retail stores and services associated with the Central Business District are located in the six blocks occupied by the retail core. From the borders of the retail core, alignments of stores and service establishments extend outward along the three streets that carry U. S. routes into the city. In each of these extensions there is a notable mixture of staple goods shops, filling stations, automotive sales and repair firms, and certain heavy goods dealers of the sort generally found localized in the heterogeneous belt surrounding or bordering primary retail centers in most large cities. The longest outward extension is on 25th Avenue. The northern end is at 25th Street and, were it not for the poorly drained land between 25th Street and 27th Street, it would probably connect with the collection of commercial establishments around 28th Street. Spacing of commercial firms along this extension is very uneven. Most of the firms are on the east side of the street, probably as in the case of the filling stations and markets, to take advantage of traffic heading out of town. Furthermore, a total of three and a half blocks on the west

side of the street is poorly drained and not suitable for any use without considerable filling. Most concentrated use of space for business purposes is at the south end of the extension just north of the Louisville and Nashville right-of-way. Livestock feed outlets, automotive equipment dealers and associated used car lots dominate this space. The four feed dealers find this location convenient to the railroad and to rural farm trade flowing to and from the city.

The retail protruberance on 14th Street is only three blocks long. The block nearest the retail core is comprised of shops of essentially the same sort as those in the retail core. Farther out and in response to traffic on U. S. 90, service stations occupy over half the commercial space.

The third extension of retail outlets is along the north side of 13th Street west of the Illinois Central tracks. Thirteenth Street is the only street that crosses the tracks in the vicinity of the retail section, and, therefore, the only place where retailing functions could "jump" the broad right-of-way to the west. Most of the establishments are second-rate staple goods outlets and services, restricted in their location to the north side of the first block west of the tracks.

These three extensions of retail forms are in essence an expression of the only pronounced modern trend in the pattern of land use for retailing in the city. Without the automobile and flows of through traffic toward and along the Sound they would be far less well-developed than they are. Likewise, within the retail core a slow migration away from the railroad station and toward the highways is in evidence. The general decline in port operations, decrease in railroad passenger traffic, and concomitant rise of tourism as a basis for urban support have been followed by a slow shift of the commercial center of gravity away from the Union Station and toward the arterial routes. In late 1940 the only new building under construction in the Central Business District was the bus terminal at the northeast corner of 14th Street and 24th Avenue, or the east edge of the retail core. While it is not wise to ascribe great importance to the location of a bus station in the pattern of commercial migration, it is certainly currently more influential than the railroad station in the flow of pedestrian traffic. The retail core cannot expand north, west or south and still retain its spatial and functional

unity. It must move eastward, and the location of the bus station and the Markham Hotel and vacant shops near the railroad station are tangible evidence that the shift is in that direction.

Wholesale establishments.--Distribution of wholesale firms in Gulfport is conditioned principally by the railroad pattern, especially the Illinois Central. They are not concentrated in a closely built-up wholesale district (Fig. 5). Most of them are situated along the west side of the Illinois Central right-of-way in the western portion of the Central Business District where they are interspersed with retail, manufactural, storage, and transportation enterprises. Other wholesalers are located at widely spaced points along the Illinois Central farther north. Absence of a closely built-up wholesale district is due in part to a combination of factors including: (1) the city is not a big wholesale center; (2) ample unused space is available along the Illinois Central; and (3) no particular advantage is derived from close spacing of wholesale organizations.

The types of wholesale establishments represented include oil and gas, grocery, beverage, meat, paper products distributors, and a junk collector. The bulk stations head the list with seven firms, followed by two each of grocery, beverage, and meat, and one each of paper and junk dealers. That wholesaling is confined to the distribution of such widely used commodities is prime evidence that Gulfport's wholesale trade area is small, and that it lies in the shadow of the trade areas of wholesale houses in Mobile and New Orleans.¹ The two meat distributors, Swift and Armour, confine their activities to a radius of about 25 miles. Pascagoula, for example, is served by meat distributors from Mobile. Other nationally known meat provisioners distribute their wares from New Orleans and Mobile. Grocery and oil products are so universally sold that wholesale trade for the Gulf Coast is not confined to Gulfport. Grocery wholesalers also operate out of Biloxi, Bay St. Louis and Pascagoula. The seven bulk oil outlets in Gulfport are balanced by seven other outlets along the Sound located in Biloxi, Bay St. Louis and Pascagoula. The larger oil companies have at least two bulk stations in coast communities; Standard Oil has four, and Shell Oil has three.

¹For discussion of trade areas of selected commercial activities in Mobile, see Ullman, op. cit., pp. 57-64.

Thus it is apparent that although Gulfport is the chief wholesale center along the Sound, it is not a big wholesale center and its firms deal only in most commonly used commodities. Conditions that aided development of wholesaling are fundamentally the same as those that have enabled it to become the primary retail center, namely, (1) centrality within the coast's population pattern, (2) midposition between New Orleans and Mobile, and (3) superior rail and road transportation connections. That it has not developed a large well balanced wholesale business is obviously due to nearness to New Orleans and Mobile. These same factors help to explain why Gulfport has more transfer and storage agencies than any other town along the Sound (see Fig. 5, Inset).

Outlying Commercial Establishments

Outlying commercial establishments in the Gulfport Section include the groups of retail outlets in the three smaller communities, and neighborhood stores scattered throughout the residential sections of Gulfport.

The best developed and most clearly defined outlying business center is in Long Beach. Altogether 16 establishments make up the center which is located at the north end of Jefferson Davis Street and adjoining part of Pass Road on the north side of the railroad. The stores for the most part deal in foodstuffs, variety goods, automobile parts, drugs, and gas and oil. Although not all space within the area dominated by shops is used, there are no vacant business properties. While Long Beach is a shoreline community just as is Pass Christian, for example, the center of its commercial interests has always been associated with the truck farming industry north of the village that thrived until 1930. The vegetables were shipped by rail; therefore, all commercial activities became localized near to the depot. Until 1930 when the truck farming industry lost its market and was reduced to a semi-subsistence type of agriculture, the town was able to support a bank. Since the bank failure the community has had to depend upon Gulfport for financial services as well as for all goods not required for everyday existence.

Handsboro, in contrast to Long Beach, does not have a compactly developed retail center. The ten retail outlets are scattered for a mile along Pass Road between the intersection of

Teagarden and Cowan Roads. The establishments include five grocery or general stores, three service stations, a drug store, and ice dealer. All the establishments are small and less prosperous appearing than the shops in Long Beach. The fact that they are all located on Pass Road would seem to indicate that they depend no less on traffic along the road than they do upon local trade.

Although Mississippi City is an old community it appears never to have supported much of a commercial section, and now, except for the tourist-commercial establishments along the beach, it has only two stores.

In Gulfport the only closely grouped collection of outlying retail stores are near the north end of town on 25th Avenue between 28th and 29th Streets. The group includes three markets, two service stations, drug store, dry goods store, cafe, and poultry market. These stores serve the neighboring population, and as was pointed out earlier, since the garment factory opened in 1937, their business has increased considerably.

Both of the principal Negro residential districts support a number of commercial establishments, but curiously enough in both areas the stores are uniformly spaced among residences. In the district west of the Illinois Central, around the intersection of 20th Street and 30th Avenue, besides markets, drug store, cleaners, barber shop and other personal services, there is a cinema and a funeral home. In "Soria City," located in the east part of town north of the railroad, the eight retail firms are either groceries, meat markets or general stores.

Elsewhere in the city, about 40 isolated small stores serve the residential areas. Most of them are food shops, and many are operated as sidelines in conjunction with a household. Although, in toto, they occupy a significant part of the city's land in commercial use, they do not share an equally large part of the city's retail business.

Tourist-commercial Establishments

As elsewhere along the Sound, the shore is the main resort attraction and U. S. 90 is the main tourist-traveled route. In this Section of the Sound margin U. S. 90 follows the beach except for a few blocks at the center of Gulfport, consequently, most of the tourist-commercial enterprises are located on the beach and/or U. S. 90. Tourist forms are not uniformly distrib-

uted along the eleven miles of shoreline; instead, they are grouped in four sectors: (1) south and east edges of the retail core in Gulfport, (2) West Beach in Gulfport, (3) Long Beach, and (4) Mississippi City. The sector at the retail core is distinguished by its hotels; each of the other sectors by concentrations of tourist courts.

Tourist courts.—The tourist court is the most prevalent type of facility for housing transients and vacationists. They dominate commercial lands fronting on the Sound in Long Beach, West Beach and Mississippi City. In Long Beach, nine courts with a total of 88 double and single cabins, occupy nine-tenths¹ of the land in commercial use along the shore. Along Gulfport's West Beach, 16 per cent of the frontage is in commercial use, and 60 per cent of it is used by six courts containing a total of 108 double and single cottages. In Mississippi City where 18 per cent of the frontage is in commercial use, two-thirds of it is taken up by five tourist courts containing 127 double and single cottages. Within the Gulfport Section, then, 20 tourist courts are situated on U. S. 90 facing the Sound.² They have a total capacity of 323 double and single cottages or almost 50 per cent of the total capacity of all courts in towns along the Sound.³

Localization of tourist courts in these three portions of the beach front is response to a number of factors. Availability of land, precedence, absence of building restrictions, and proximity to retail shops and services—all, either singly or in combination, have had some bearing upon the pattern in the initial

¹This figure is based upon use of frontage. Tourist courts use much space, and in most instances the lots, in accordance with the pattern of initial subdivision along most of the shore, are long and narrow. If the figures were based upon areal measurements, the pre-eminence of the courts as users of commercial space would be even more pronounced.

²In 1940 there were only 90 tourist courts in Mississippi. Sixteenth Census of the United States: 1940. Census of Business, Vol. III, Service Establishments: 1939 (Washington: Government Printing Office, p. 623.

³This does not include two tourist camps north of the corporate limit on U. S. 49 or the two in the northeast part of Gulfport on Pass Road. These are small and less well built than the beach courts. Because of their location they do not figure prominently in tourist or vacation business, but tend to rely upon long-term rentals.

or developmental stages of its growth.

In each of the three sectors unused land has always been plentiful. In 1940, for example, 30 per cent of the shore frontage in Long Beach was vacant; 26 per cent on West Beach; and 36 per cent in Mississippi City (Table 8). This means that in the past most any part of the shore in the Gulfport Section except East Beach was a likely place to acquire necessary space of a tourist establishment. Furthermore, the three sectors have always been the least valued for residential purposes, and the possibility of acquiring residential land at a reasonable price to be converted into a tourist court has been proportionately greater than on East Beach.

Building restrictions in the form of zoning ordinances were not in force any place along this part of the Sound until 1940 when Gulfport enacted a comprehensive zoning ordinance.¹ But a voluntary restriction has for a long time prevailed on East Beach, where owners of high class residential property have sought to preserve land values by refusing to allow commercialized types of occupance. Such a force has never been operative in West Beach, Long Beach, or Mississippi City.

The importance of precedence or an early start is difficult to evaluate. Regardless of how important it is or has been, the fact remains that in each of these sectors a tourist court was started in the early 1920's. In Long Beach, once the first court was in operation, the contagious effect of a sound business venture appears to have influenced nearby property owners to erect courts. In Mississippi City, on the other hand, twenty years lapsed from the time the first cottage² was built until the second court was opened.

Regardless of whether a tourist court caters to the vacation trade or the transient trade, it is a distinct advantage in the first instance to be near to stores, and in the second instance to be near to restaurants and service stations. Courts that aren't near to such service establishments, have in some

¹In 1939 Harrison County voted to prohibit buildings, signboards, and other commercial use of property between U. S. 90 and the seawall.

²The first cottage was built in 1916 as a summer residence. This property was not enlarged and operated as a tourist court until after 1930.

cases provided them to promote business. Proximity to Gulfport's Central Business District with its cinemas and other places of entertainment has been a strong factor in the concentration of courts on West Beach.

Examination of the circumstances under which individual courts commenced operating reveals that in some cases none of the aforementioned factors appears to have been of much significance, except availability of space. Most of the older and smaller courts are owned by individuals who never have operated on a large scale. They entered the business more or less as a sideline simply because they had the space and capital to devote to a few cabins. This point helps to explain why the nine courts in Long Beach, which are old (average age, 9 years) and small (average size, 10 cabins), are distributed in a chance pattern, rather than being concentrated near to (1) the center of the village or (2) Gulfport. In contrast, in Mississippi City four out of the five courts are less than four years old and they average 25 cabins each. Owners of these new courts have a big investment in their properties, and choice of sites has been made with a view toward greatest possible revenue. Therefore, they have located outside of Gulfport to avoid city taxes,¹ but close enough to take advantage of its dining and entertainment services, congregated together for functional convenience, and supplied their own service stations and restaurants.

Analysis of the ages of the tourist courts in the Gulfport section confirms the fact that they are a relatively new landscape form. Within the past 12 years the number of courts along the Sound has increased from seven to forty.² One or two cottages were erected by 1921, but development of privately owned courts did not begin on an appreciable scale until 1927 and 1928. During the intervening years some towns provided camp sites for tourists.

¹Although some court operators complained about taxes, none suggested that city taxes were restrictive or high enough to counteract the advantage of an otherwise superior location.

²Allowing for incompleteness in the census of tourist courts taken in the first 8 months of 1940, it is still significant that Mississippi is one of the three states (Michigan and Florida are the others) that report more than a 100 per cent increase in number of courts between 1935 and 1940. Sixteenth Census of the United States: 1940. Census of Business, Vol. III, op. cit., p. 623.

They were made obsolete by subsequent commercial tourist court development. As has already been suggested, Long Beach was the first town in which the tourist court became a popular enterprise. Five of the nine courts were started by 1928. At the outset all courts were small, additional cabins being added as the ventures proved themselves and capital became available. From 1928 to 1935 only three new courts were built in the Gulf Section--all on West Beach. For the Coast as a whole, the period of greatest expansion was between 1936 and 1940. In that period eight new courts were built in the Gulfport Section and many of the older establishments were enlarged. In 1936 a total of 103 cabins were constructed in new courts located at various points along the Sound. Construction subsided somewhat in 1937, but in the following year seven courts with a total capacity of 98 double and single cottages were erected. By 1939 and 1940 construction of courts in the Gulfport Section dropped off and only a few cabins were built.¹

Development of the tourist court business along the Sound reflects the general trend in automobile travel and construction of hard surfaced roads. Although roads were poor in most states and especially poor in Mississippi, cars were being used by summer vacationists, and a few winter visitors to the coast shortly after World War I,² and by 1925 the number of train-hauled tourists was being rapidly reduced by use of automobiles.³ After the seawall was completed, assuring the stability of the beach roadway, and with the building of bridges to replace ferries at the Pascagoula River, Biloxi Bay, and St. Louis Bay, through traffic along the Sound increased rapidly. The seawall and all the bridges were complete by 1928--the year that marked the effective beginning of commercial tourist court operation along the Sound. The decline in court construction from 1930 to 1934 was mainly a reflection of the poor business conditions and reduced tourist travel during the Depression. The upsurge in 1936 was in

¹It appears as though for the moment, the saturation point has been reached in tourist court development in the Gulfport Section. In 1940 very few requests for potential tourist court property were placed with real estate dealers, and some of the courts were being offered for sale. Information from Mr. Kerr, Kerr Realty Company, Gulfport.

²James, op. cit., p. 134.

³Ibid., p. 298.

part an outgrowth of partial recovery from the Depression, and in part a result of the state-wide road-building program. Figuratively speaking, improved roads brought the Gulf Coast closer to all Mississippi populations and meant that, to an increasing degree, the state could be included on the itinerary of the nation's touring public.

Development of tourist courts has also been hastened in recent years as a result of their rapid rise to popularity as a type of accommodation. Increased demand, in turn, has effected a noticeable improvement in the quality of the accommodations. Modern courts are as well equipped and furnished as high class hotels. Moreover, they are far more convenient and less expensive than most hotels.

The business that supports tourist courts along the Sound is seasonal; it is also regional. In summer the Sound margin is a haven for Southerners; in winter the trade is in large measure from the Middle West. The seasonal and regional ramifications of the trade in terms of the tourist court business are outlined in the following analysis of data presented in Figures 10 and 11.¹

That the Mississippi Gulf coast plays a larger role as a summer resort than winter resort is amply illustrated by Figures 10 and 11.² About 40 per cent of all registrations occur in the peak summer months of June, July and August, and only 17 per cent in the winter season of December through February.³ The spring

¹Data plotted in Figures 10 and 11 are based on sample information extracted from the files of Gulf Haven Tourist Court located on Gulfport's West Beach. This court is typical of the newer ones located on the Sound from point of quality, facilities, age, and size. The data are in all major respects representative of the seasonal and regional aspects of the tourist court trade. They are not representative of the hotel trade which is more largely a winter and early spring business. The sample included 579 registrations over a two year period--January 1939 through December 1940. Information provided through courtesy of Mr. Henninger, Manager, Gulf Haven Tourist Court.

²No attempt was made to investigate the duration of stay for each registrant. In this court, as in nearly all others facing the Sound, the average duration of stay is greater in summer than in winter by a ratio of about four to one. This means that on both Figures 10 and 11 the importance of the summer season trade is underestimated. Neither figure should be used in the sense of indicating the amount of business transacted by months or seasons.

³The seasonal contrast of the tourist court business be-

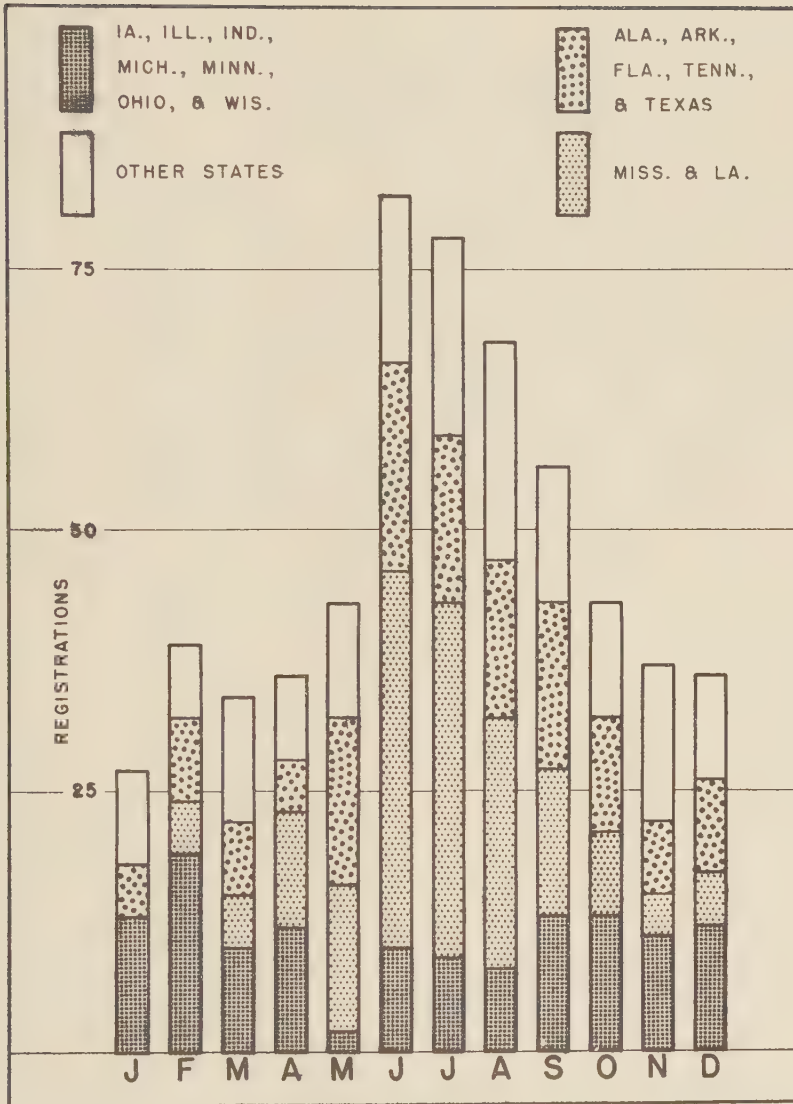


Fig. 10.--Monthly registration of guests at Gulf Haven Tourist Court, Gulfport, by area of origin, 1939-1940.

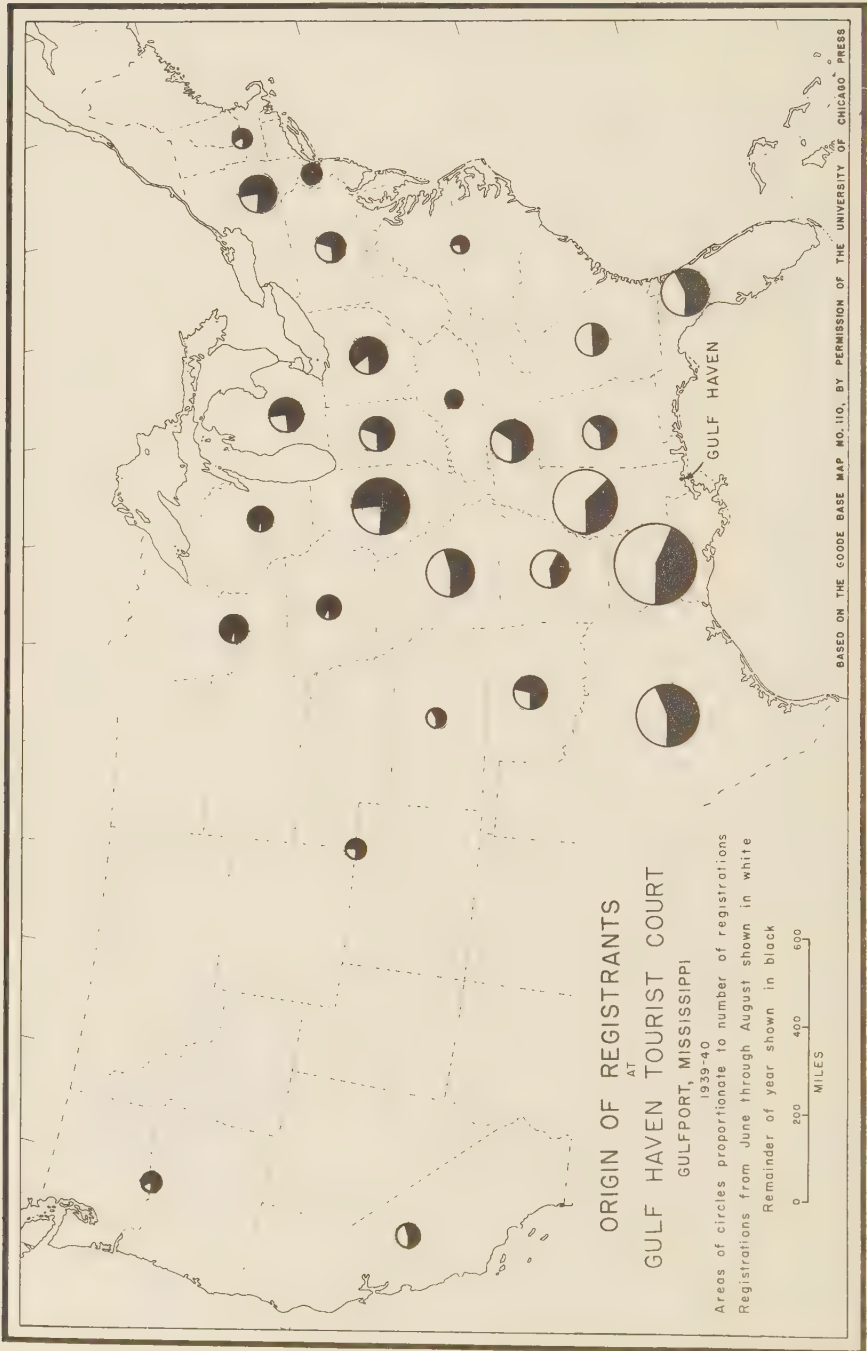


FIGURE 11

and autumn months have only slightly more registrants than the winter months.

The regional aspect of the trade is best shown by Figure 11. Due to the predominance of the heavy summer season trade, the regional picture on an annual basis is dominated by states from which the bulk of the hot season registrants originate. The leading ten states in percentage of total annual registrants are: Louisiana, 16.2; Mississippi, 10.8; Texas, 10.2; Illinois, 8.3; Missouri, 5.2; Florida, 5.0; Tennessee, 4.2; New York, 4.0; Arkansas and Ohio, 3.5 each; and all others, 29.1. Almost two-thirds of all guests thus originate from nine southern and midwestern states. Only a small number come from the Atlantic seaboard states, and practically none from the intermontane west.

In summer, 68 per cent of all guests come from Mississippi and the following six nearby states: Louisiana, Texas, Arkansas, Tennessee, Alabama, and Florida. Over 50 per cent of all registrants in this period are from the three first states listed. Of this figure, almost a half is from Louisiana, and more than a third of the Louisianians are from New Orleans. Louisiana's leadership over Mississippi is due almost entirely to New Orleans and its proximity to the Mississippi coast.

The universal desire of city folks to "get out of town" and "into the country" is a prominent factor in the resort and tourist trade, and generally speaking, a large fraction of the visitors to the coast towns are residents of large urban centers. In summer, in addition to New Orleans, such places as Memphis, Little Rock, Baton Rouge, Kansas City, and St. Louis contribute a fairly large number of guests. All of these cities lie to the north and west of the Mississippi coast; none is located to the north and east of it. This fact emphasizes the Mississippi coast's strategic position in the sectional flow of tourists, as the seashore resort nearest to states in the lower Mississippi River region. The point is best illustrated by contrasting Louisiana and Alabama--both equidistant from Gulfport. Disregard-

tween Mississippi and Florida is demonstrated by the seasonal variations in employment. In Mississippi the number of employees in tourist courts in January is only 78 per cent of the number in July; whereas in Florida, December employment is 114 per cent of June employment. Sixteenth Census of the United States: 1940. Census of Business, Vol. III, op. cit., p. 629.

ing New Orleans, Louisiana contributes five times as much summer trade as Alabama. The explanation for this contrast appears to lie mainly in two facts: (1) Alabama has a resort development roughly comparable to the Mississippi coast along its Gulf margin, south of Mobile, and (2) it is relatively close to the superior Florida resorts. Louisiana, on the other hand, until recently had no seaboard resorts of importance and the Mississippi coast is the nearest attractive beach area. The same sets of conditions apply to other southern states west and north of Louisiana, and north and east of Alabama.

Another situational factor enters to help explain the importance of tourist traffic originating from Texas and Florida, which rank third and sixth respectively in total number of registrants. Size of the Texas population is, of course, of first importance, but beyond that fact, it should be noted that parts of both states lie south of the latitude of Mississippi Sound on opposite flanks of the Gulf of Mexico. They are connected by U. S. 90, which extends from Jacksonville to Van Horn, Texas. Because of the southerly extension of parts of both states, this route, which skirts the northern margin of the Gulf, is a convenient one for southern Texas traffic moving toward the Atlantic seaboard, and for Florida traffic heading for the West. In view of the fact that southeast Texas and Florida have seashores, and, in case of Florida, resorts of wide renown, it is unlikely that they depend upon the Mississippi coast as a vacationland. Instead, the prominence of Florida and Texas registrants, 40 per cent of which occur in summer, is due to (1) normal increase in summer tourist travel, and (2) the fact that the Mississippi coast is a convenient first-night stopping point for inhabitants of large and populous sections of Texas and Florida who may be heading east or west on transcontinental tours.

The broad outline of the regional pattern of tourist trade in the winter season is essentially the same as in summer, only it is better balanced. No three states dominate the winter trade as Louisiana, Mississippi and Texas dominate the summer trade. Trade from the Atlantic seaboard and western states is as unimportant in winter as it is in summer. Improvement in regional balance is due to (1) the sharp drop in trade from neighboring southern states and (2) a small rise in trade originating in midwestern states. Illinois contributes more tourists during the winter than any

other state. It is followed by Michigan and Texas. The absolute increase in midwestern trade in winter over summer is not large. The prominence of that region in the winter tourist trade structure is due primarily to the sharp decline in southern trade, and is, therefore, more relative than it is absolute. Only in January and February does the tourist population from the seven midwestern states exceed the number from seven southern states (Fig.10).

In large part, trade originating in the Middle West in winter consists of persons en route to Florida for the winter. Relatively few parties from the Midwest or elsewhere return year after year to winter headquarters along the Sound. That this is true is evidenced by the scarcity of trailer camps. Even granting reduced rates tourist courts, especially the more modern establishments, are too expensive for the average winter season resident. Hence, in contrast to the summer trade, the tourist court business in winter is predominantly a transient trade.

Hotels.--Gulfport has seven hotels. Five are located so as to capitalize upon tourist and commercial trade; one is a small apartment hotel on West Beach that serves the tourist trade; and the seventh is a small commercial hotel facing the Union Station (Fig. 5, Inset). Of the five dual-purpose hotels, two are on 14th Street in the retail core. They are relatively small and their clientele consists principally of commercial travelers. The other three, the Markham, Great Southern and Colonial, are situated near the southeastern corner of the Central Business District either on U. S. 90 or facing the Sound, and in good position to serve the tourist trade.

The Great Southern, a sprawling, three-story, 200-room wood structure, is one of the oldest buildings in Gulfport. It opened for business in 1902, the year the port commenced to function, and is the oldest tourist accommodation in the city. Its site was as superior in 1902 as it is now in that it faced the Sound and was equally accessible to the Union Station and East Pier. Nowadays it enjoys the further advantage of being on U. S. 90 and in choice position to capitalize upon the flow of tourist traffic along the Sound as it funnels through town on 13th Street. Despite location near the heart of the city, the grounds include extensive lawns--a feature that enhances its value as a resort property.

The Markham Hotel, a 200-room, eight story brick building

and tallest in the city, is located on U. S. 90 at the southwest corner of 14th Street and 23rd Avenue. Like several of the hotels in Biloxi (Chapter IV), it is a product of the real estate boom of 1925-26. The hotel was named after the president of the Illinois Central, and is one of the few commercial structures built in expectation that transfer of the Gulf and Ship Island railroad to the Illinois Central System would effect a rejuvenation of the city's waning shipping business and greatly increase its tourist trade.

The Colonial is a 25-room combination tourist and residential hotel located on East Beach near the Great Southern. Together these forms account for all of the land in commercial use along East Beach.

The Markham and Great Southern are more expensive than the other hotels and cater to a wealthier class of tourists. Like the other large hotels along the Sound they have a maximum trade in the winter season (Chapter IV). The summer season business is good, but not so good as the business of the tourist courts.

It is estimated that the hotel capacity of Gulfport is about equal to the total tourist court capacity in the Gulfport Section, but it is only half the capacity of Biloxi hotels. The disparity is explained largely by Gulfport's lack of an interesting historical background and picturesqueness that so long have been successfully exploited to attract winter guests to Biloxi. The winter business, as already noted, is the mainstay of the best hotels. Lacking a distinctive basis for a large winter business, Gulfport did not push hotel development in the pre-automobile era as did Biloxi. And since travel by car has become the rule, all of Gulfport's attention has been directed toward tourist courts as the most profitable type of accommodation for summer vacationists and transient tourists.

Other tourist-commercial facilities.--Other facilities for housing tourists include (1) rooming houses, (2) private homes, which may provide flats as well as rooms, (3) garage apartments and (4) rebuilt servants quarters. A few rooming houses are operated in conjunction with tourist courts, but in most instances they are buildings converted from private dwellings, and located in blocks that are entirely residential. Garage apartments and converted servants quarters are located at the rear of residential lots. Some of these types of accommodation are widely scattered

in the less fashionable residential blocks south of the railroad in Gulfport. The greatest concentrations are (1) near the east end of West Beach extending two to three blocks back from the shore, and (2) east of the retail center along U. S. 90 where it follows 15th Street and farther along on Second Street. In both areas the facilities are not closely grouped. Rather their distribution reflects the attempts of sporadic middle class property owners to share in the heavy summer vacation trade.

Oil and gas stations patronized mainly by tourists are on U. S. 90, and the majority are localized on both sides of Gulfport's retail center. In these segments of the route, each about four blocks in length, 17 service stations occupy strategic sites.

Restaurants, far less numerous than service stations, are not well concentrated. Most of them are in the Central Business District--the best being in the larger hotels. West Beach has one large restaurant as does Mississippi City.

Land in Residential Use

Factors Affecting the Pattern of Residential Land

The gross pattern of land in residential use has already been set forth at the beginning of this chapter in terms of the built-up area. The principal features of the residential pattern are (1) development along the shore, and (2) development around the commercial centers.

In detail the pattern of housing is badly broken and interrupted by lands in other uses and by vacant land. The main features that interfere with a uniform and evenly spaced pattern of dwellings are: (1) the broad band of transportation and commercial land extending north-south through the center of Gulfport that divides the city into halves; (2) the Veterans Hospital property that separates Mississippi City from Gulfport; (3) the Louisville and Nashville right-of-way that constitutes a narrow but effective line of demarcation between the better class beach residential zone and the lower class inland residential areas; and (4) the broad strip of poorly drained land extending across the northern part of Gulfport.

Within the areas of land dominantly in residential use much land is idle and the pattern of used space is exceptionally spotty. The most closely built-up and intensively used residen-

tial areas are those south of the Louisville and Nashville. Even in this narrow strip of highly attractive residential land few blocks are completely used.¹ Several factors help to explain the presence of vacant lots within the residential areas.

Premature subdivision in face of a small demand is one factor that has tended to spread out and effect a scattered pattern of residences. Over half of Gulfport has been platted, but not much more than a fourth of the incorporated area has been developed and streets opened. Even so the amount of streetage considerably exceeds the current demand for building sites. And once streets have been opened, residences--especially low grade residences--tend to develop singly or in groups of twos and threes at points well removed from fully built-up blocks. Eventually the intervening lots will be used, but not until demand is greater than it is now.

Residential areas also lack the unifying effect of a municipal sewerage system.² If any provision is made for sewerage disposal at all it must be a septic tank. This means that from point of sewerage disposal one plot is as good as another. Hence, the tendency is for the pattern of dwellings to spread out rather than be confined to an area served by a unified system for refuse disposal.

It has already been pointed out that drainage conditions are responsible for large stretches of idle land. In similar manner, minor details of the drainage system cause small areas to remain idle. In western Gulfport, adjoining Long Beach, and to some extent in eastern Gulfport, many lots are crossed by drainage ditches and associated low-lying land. These are not totally

¹Figure 5 is a generalized map, and in reality the spottiness of the residential pattern is greater than is indicated thereon. The rule followed in construction of this map was to disregard vacant lots that in toto amounted to less than a fourth of any block, and to show the block as in full residential use. If only two or three lots in a block were built-up, the procedure was to indicate the block as a fourth built-up. Thus, the spottiness is somewhat diminished and the built-up area a little greater than would be true if the use of each use-parcel were exactly mapped. A map scaled at 1 inch to 400 or 500 feet would be required to show precisely the use pattern. Such maps are too large and prohibitively expensive in relation of their net value to the study.

²Only the Central Business District has a municipal sewerage system. It empties into the outer part of the Anchorage Basin.

useless properties. If and when demand warrants the expense, they will be tilled, filled and brought into use. To date, however, without exception they have been passed up in favor of better drained parcels of which there is an ample supply.

Still other lots in residential sections are undeveloped for reasons of ownership. Some lots are owned by nonresidents, who, not desiring or being able to develop them themselves, hold them in anticipation of better prices. Ownership of a purely speculative nature is most common near the beach where the likelihood of improved demand is greatest.

Finally, it should be noted that north of the railroad in Long Beach most of the land is in crop and the pattern of settlement is one of rural farmsteads. Thirty-seven of the dwelling units in Long Beach are rural-farm dwellings (Table 11); there are none in Gulfport.

Distribution of Classes of Residential Land

Class I.---Class I dwellings are almost all confined to East Beach area in Gulfport. A third of all frontage and half of all residential property facing the shore between the Anchorage Basin and the eastern corporate limit is Class I. Apart from one or two Class I properties on Second Street, there is no Class I property anywhere in Gulfport except East Beach. In Mississippi City and Long Beach, 12.9 and 2.2 per cent, respectively, of the total beach frontage is rated Class I.¹ In other words, in the Gulfport Section, just as in the Bay St. Louis-Pass Christian Section, nearly every Class I property fronts on the Sound.

Houses in this class in Gulfport are on an average considerably newer than those in either Pass Christian or Bay St. Louis, and a few have stucco exteriors. Individual lots measure about the same size as lots in Pass Christian's best residential area and, in general, the upkeep of dwellings and lawns is excellent. A few of the properties have servant quarters at the rear of the lot. Virtually all residences are permanently occupied by the owners. They are not merely summer residences as is true of the majority of high caliber residences in Bay St. Louis and Waveland. Except in Long Beach² nonresident ownership of shoreline

¹Class I properties in Mississippi City are widely spaced and many of them are not indicated on Figure 8. (Cf. Table 9.)

²Forty-three dwellings in Long Beach are classified as

residences in the Gulfport Section is not characteristic for two reasons: (1) It never has been a prominent summer residential area, and (2) a large demand in Gulfport for good residential sites has tended to keep ownership of beach property in local hands.

Explanation of the concentration of Class I dwellings on East Beach lies fundamentally in its physical quality. Here, in contrast to West Beach, the surface near the waterline averages 15 to 20 feet above mean sea level and, what is more important, it is uniformly level. No natural drainage channels cut out to the Sound at any point from the Anchorage Basin to the Veterans Hospital grounds. Height and uniformity of surface are nowadays matters of less concern to shoreline property owners as the seawall precludes wave-cutting, and to modern road-building techniques the channels present little difficulty. In 1900, however, with no seawall and only a sand road along the beach, wave damage and channels were hindrances of some magnitude. Thus East Beach was far more superior to West Beach in the first years of Gulfport than it is now, and it was early established as the best residential section.¹ Another factor that appears to have enhanced East Beach as a place of residence is that it is on the Biloxi side of town. How important this fact was 40 years ago is difficult to tell. In 1900 Biloxi had 5,500 inhabitants and was the largest town along the Sound. Although it was not looked upon as the functional capital of the coast, its size gave it more drawing power than Pass Christian, which was half as large,

"vacant, not for rent or sale." This is a higher percentage than in Bay St. Louis, and indicates that it is a summer residential community, although it does not have a reputation as a resort comparable to that of Pass Christian, Bay St. Louis or Waveland (see Table 11). If it is assumed that all such vacant dwelling units are used only in summer and that all are on the beach, then 44 per cent of the 98 beach dwellings in Long Beach are summer homes.

¹Superiority of East Beach over West Beach also appears to be the sustaining reason why Gulfport's commercial district is on the east side rather than west side of the Illinois Central right-of-way, and it may help to explain why the Union Station is located on the east side of the tracks. With the Station on the east side, East Pier the only one functioning, and the best residential land along East Beach, it is not surprising that the retail core developed east of the right-of-way. By the same token, it explains why West Beach is the "wrong side of the tracks."

not much of a commercial center and almost as far away. The position of Biloxi is cited by local citizens as having some significance in maintaining the quality of East Beach residential property, but no one offers it as a point of more than tertiary value.

East Beach surpasses Mississippi City and Long Beach in excellence of dwellings primarily because neither of the latter communities has a large population of prosperous families who can afford expensive homes. And, as pointed out earlier, at no time in the past has either of the smaller communities had more than a small number of large summer homes owned by wealthy nonresidents.¹

Class II.--Class II residences are more numerous in the Gulfport Section than Class I residences. They occupy nearly all the frontage (27.0 per cent) on East Beach not taken up by the highest class dwellings and some of the space of Second Street. On West Beach, 43 per cent of residential property is in this class, but many of these homes are interspersed among Class III properties and do not show up prominently on Figure 5. The greatest concentration in the West Beach area is back from the beach boulevard, where a total of about six city blocks not fronting on the shore, nor particularly well concentrated, are occupied by Class II residences.

The shoreline residential area in Long Beach is in general about the same quality as West Beach. Fifty-seven per cent of the frontage is residential and of this over 40 per cent is Class II property. In Mississippi City, where a third of the frontage is residential, about one-fifth of it is of Class II caliber. In addition to site conditions and lack of local demand for high quality homes, recent commercialization tends to detract from the quality of the beach residential areas in West Beach, Long Beach, and Mississippi City.

The only other Class II area in the Section is Broadmoor subdivision (oval-shaped street pattern on Fig. 5) located north of the railroad tracks in eastern Gulfport. This subdivision is the sole example of a fairly high grade residential tract located

¹Mississippi City's fame in the late nineteenth century as a summer resort was due principally to two large hotels, the Gulfview and Teagarden, although it did have some summer cottages and a few villas owned by New Orleanians. See Wilkinson, op. cit., p. 40.

north of the railroad from Waveland to Biloxi. Less than 10 years old, it has been built-up rapidly by local residents. Many of the homes are stucco-finished; all are architecturally attractive and in first-class repair. Building restrictions require a high quality home dwelling and exclude commercial establishments. The curvilinear street pattern also provides a measure of distinction. Promotion of this subdivision has been successful because of local demand for better grade residential sites near to schools, the business district, and on land that is not too expensive. That it has succeeded where similar subdivisions along the shore in Long Beach and Mississippi City have failed, is due altogether to the price of land and the fact that the latter are too far from Gulfport.

Class III.—Class three residences are more common in the Gulfport Section than Classes I and II combined. Areas dominantly of Class III caliber are (1) West Beach south of the railroad, (2) East Beach between Second Street and the railroad, (3) adjacent to and northeast of the Central Business District, (4) Handsboro, (5) central part of Mississippi City, and (6) center of Long Beach. In each of these areas intermixing of classes is characteristic, and no one is uniformly Class III throughout.

Of the residential land along the beach, 49 per cent in Long Beach, 56 per cent in West Beach, 9 per cent in East Beach, and 36 per cent in Mississippi City is middle class property. The presence of a few medium grade residences on East Beach is a result of fairly minute subdivision of one small block. The commercialized residential properties that accommodate vacationists are included in Class III on Figure 5. Many of these are large frame dwellings that normally would be considered Class II. Although alteration to boarding-house status does not greatly affect the appearance of the structure, it does tend to depress the quality of the residential area.

Class IV.—Class IV residences are the most common category north of the Louisville and Nashville in Gulfport. Except in Mississippi City and Long Beach very few homes in this class are situated south of the railroad. North of the railroad they are widely scattered. The chief neighborhoods in which they predominate are (1) east of the garment factory, (2) around the fair grounds, and (3) along Pass Road in northeast Gulfport. Also included in this class are the new houses in the Negro quarters,

where newness as a measure of quality is largely voided by close spacing and poor condition of surrounding grounds.

Class V.---Class V dwellings are restricted to territory north of the railroad. Most pronounced concentrations are in the chief two Negro settlements. Houses of this type are substandard in most every respect, but in general, those in this Section are not such unhappy specimens as the worst examples in the Biloxi and Pass Christian Negro neighborhoods. Although spacing of houses in the Negro districts is close as compared to any white residential area, the lots are larger than in Pass Christian's Negro quarter. In general, in Gulfport's medium and low class residential districts the standard lot has a 50-foot frontage. This means that the maximum potential use density over much of the city is the same. In the Negro subdivisions, however, parcels of 25-foot widths are common and the maximum potential use density is proportionately higher.

Throughout the Gulfport Section practically all Class V properties house Negroes, but not all Negro dwellings are in Class V.

Location of the chief two Negro quarters, one around the intersection of 20th Street and 30th Avenue, and the other, "Sor-ia City," along the north side of the railroad in eastern Gulfport, appears to have been a chance selection of sites at an early date. And, as in most southern towns, once a subdivision starts as white or as Negro, it remains white or Negro and no intermixing occurs. Not all of the Negro residences are in the main two Negro quarters. Almost all dwellings north of the Louisville and Nashville (except those facing the railroad) in the southwestern part of Gulfport, house Negroes. Likewise, most of the Class V dwellings in the east end of town, midway between the railroad and Pass Road are Negro residences. In Long Beach, which has a very low Negro population, the Negro district is indicated by the scattered pattern of Class V dwellings near the western end of town north of the railroad. In Handsboro there are not many Negroes and their residences are not numerous nor sharply localized, but instead are scattered more or less around the white residential area. In Mississippi City the Negro area is north of the railroad.

Land in Communal Use

The total area given to communal functions in this Section is relatively greater than it is in the Bay St. Louis-Pass Christian or Moss Point-Pascagoula Sections, but not so large as the space for similar activities in the Biloxi Section. The major part of all communal land is used by institutions whose functions are of national scope. Space used for communal functions of purely local interest is relatively no more important than it is in most urban places of similar size.

Land Used for Governmental Purposes

As in most towns the amount of land required for governmental purposes is an exceedingly small portion of all land in urban uses; compared to the requirements for housing, it is minute. The Gulfport Section has only three structures wherein functions of a purely governmental nature are executed, namely, two city halls and the county courthouse. Other buildings owned and operated by local and federal governments where services for the convenience and welfare of the community are performed include post offices, waterworks, and fire stations. None of these functions require much space, and inasmuch as they are operated for benefit of all the people, they tend to be centrally located and readily accessible to the populations they serve. The city hall, fire station, waterworks, and post office in Long Beach are all concentrated in the shopping section at the north end of Jefferson Davis Street, and the post office for Mississippi City is at the center of the principal built-up area.

In Gulfport the main government buildings are localized at the eastern margin of the retail core. Indeed, as can be seen on Figure 5, Inset, the southeast and eastern boundaries of the retail core are marked by an alignment of communal establishments including churches and the city library. This spatial arrangement of governmental functions is one of great convenience as the buildings are equally accessible to one another, to the commercial center, and to populations they are dedicated to serve.

Gulfport's city hall was constructed in 1906 and provides besides space for city offices, an auditorium on the second floor for various civic gatherings.

The original county courthouse was built in 1903 when the

county government was transferred from Mississippi City. The transfer was accomplished as soon as Gulfport became a functioning port and gave all evidence, because of greater accessibility, of becoming the trade center of the county. The move augmented Gulfport's status considerably, and left Mississippi with only the summer resort trade to support it. The building has been subsequently rebuilt so as adequately to house all county governmental organizations.

The attractive post office building was constructed in 1910 and has space on the second level for federal government offices such as immigration, customs, and internal revenue. One fire station in Gulfport is located at the city hall; the other on the fair grounds in the western part of town. The waterworks is in two parts. The office section is immediately north of the city hall, and the main pumping station and large surface level storage reservoir are two blocks farther north on 24th Avenue.

Land Used for Institutions

Establishments of an institutional nature include hospitals, schools, churches and cemeteries. In the Gulfport Section the amount of land used by each varies in the order listed. Space for hospitals is uncommonly large due to presence of U. S. Veterans Facility No. 14.

The Veterans hospital property occupies 147 acres in form of a long strip at the east edge of Gulfport that reaches from the Sound inland to Pass Road. The parcel is 2,000 feet wide between the beach and the railroad, and 1,000 feet wide north of the railroad. The main buildings and offices, all of attractive design and set amid spacious, well-trimmed lawns are south of the railroad and face upon the Sound. The space north of the right-of-way is in gardens or farmed as part of a program of treatment through occupational therapy.

The original buildings were built in 1916-17 for the Mississippi Centennial Exposition. When the country entered World War I, the plan was altered and the property served as a naval training station. In 1921 it was transformed into a hospital operated by the U. S. Public Health Service and two years later became a neuro-psychiatric hospital under the Veterans Administration. The grounds and number of buildings have been enlarged and increased at various intervals. In 1940 over 40 buildings were

used to minister to the needs of about 760 patients.¹

These institutions, especially the hospital, represent an excellent use of land. The pleasant climate, scenic qualities of the grounds and shore are physically and psychologically beneficial to the mentally ill, and treatment through outdoor activities is possible the year around.

The location not only benefits the institution and the patients, but the institution is a considerable factor in the local economy. The pay roll² is about equal to the pay roll of the garment factory, and is split among about 250 employees. The staff of trained medical personnel and assistants accounts for a large fraction of the government and professional workers in Gulfport's occupational structure.

Kings' Daughters' Hospital, which occupies about a fourth of a block on West Beach near the port, is the only one in the Gulfport Section operated for the benefit of local inhabitants.

Schools in this Section include several public schools, one parochial school and two privately operated preparatory schools. The public and parochial schools serve the local populations: the preparatory schools draw most of their students from many parts of the country and some from foreign countries.

Public schools are arranged in a pattern that rather closely follows the distribution of population. Gulfport supports six public schools for white children. Four are grade schools--one each in East Beach, West Beach, the north central part of town, and the fourth in the northern part of town. The high school is near the east edge of the Central Business District, and the junior high is situated northeast of it. The Negro grade and high school is in the Negro quarter west of the Illinois Central tracks. Two other small grade schools for Negroes, one in "Soria City" and the other in the area of scattered Negro settlement in the southwest part of the city, complete the list of public school facilities in Gulfport. A small parochial school operated by the

¹This institution together with the Soldiers Home, located on Back Bay west of Biloxi, account for practically all of the 1,700 persons in Harrison County listed in the census as "in institutions." Sixteenth Census of the United States: 1940. Population, Vol. II, Part 4, op. cit., p. 304.

²In 1934 it was about \$26,000 per month.

Sisters of Mercy is situated north of the Central Business District on 25th Avenue. Other public schools include the Long Beach school and Mississippi City grade school. Both are located near the respective centers of population, and, as in most small towns, are conspicuous by the amount of space they occupy in relation to uses of land for other urban purposes. Handsboro has a grade school for whites and another for Negroes.

The privately supported schools that draw a majority of students from areas far removed from the Gulf Coast, and give the Section a measure of extra-local importance in the field of education are Gulf Park Junior College for girls and Gulf Coast Military Academy. Gulf Park has occupied a 31-acre tract facing the Sound near the east end of Long Beach since 1921. The plant is valued at over \$500,000. The military academy was established in 1912 in Mississippi City at the eastern edge of the Gulfport Section. The property is in two parcels totaling about 30 acres and with more than 1,200 feet of frontage on the shore. The institution has both junior and senior departments and a total enrollment of about 300. Although both institutions were started allegedly to meet a demand along the Sound for private boarding schools, they have capitalized no less upon their attractive sites than upon staffs, management, and curricula to develop national reputations. Enrollment from local towns now constitutes a small part of the student bodies. In 1938-39 at Gulf Park, for example, 10 per cent of the 176 members of the regular student body lived in Harrison County; only 16 per cent were from Mississippi and 56 per cent came from addresses outside of Mississippi and neighboring states.¹

Gulfport maintains a Carnegie-endowed municipal library located south of the courthouse. Apart from a W.P.A.-supported library in Long Beach, this is the only institution of its kind in the Section.

Churches are more numerous, but their space requirements are smaller than the space required for schools. Twenty parcels of land in Gulfport, four in Long Beach, and two each in Mississippi and Handsboro are devoted to religious institutions. The parcels vary in size from a fourth of a city block down to 25-

¹W. C. Ellis (ed.), American Junior Colleges (1st ed; Washington: American Council on Education, 1940), pp. 252-53.

foot lots too small to be indicated on Figure 5. The number of churches is due in large part to the duplication resulting from the Negro population. Almost half of the church properties in Gulfport are in the Negro localities. Distribution of churches for whites in Gulfport shows a tendency toward concentration east of the commercial district and to a lesser degree west of it beyond the Illinois Central tracks. Generally, however, distribution of church properties shows a close correlation with the population pattern. It is noteworthy that only two churches, one in Gulfport and the other in Long Beach, occupy space along the beach.

In keeping with the universal practice of using well-drained terrain for cemeteries, Gulfport has set aside 20 acres on the north flank of the broad swale in the uninhabited northwestern part of town as a community burial ground. The cemetery in Long Beach, much less conspicuously situated, is at the south edge of the railroad about four blocks west of the shopping center. The small cemetery in Handsboro is located on Pass Road.

Land Used for Recreation

Gulfport is the only one of the four communities that has set aside space for parks. As would be expected the majority of the park space is along the beach. On West Beach one 10-acre tract, wooded with pine, magnolia, youpon, and dogwood, is a minor forest preserve of native species. The forepart of the tract contains a small stream, the lower end of an interdune drainage channel that runs out to the Sound. The stream detracted from the acreage for residential purposes, and in 1924 the city purchased it to help satisfy a demand for more public space for rest and recreation created by the rising influx of tourists. Across the Beach boulevard from the park on the seawall is a two story community pavilion with a long frame bathing pier extending out into the Sound. Two blocks east of the pavilion on the north side of West Ward school is a city playground. A large parcel of idle land on Second Street east of East Ward school provides playground space for the East Beach area. At 24th Street and the beach a city block is used in part for a new community house and in part as a park. The final tract on the mainland in the city park system is located on the north side of Pass Road on the northeast quarter of the city. The portion of the tract adjacent to the

road is clear. The northern portion, which slopes gradually toward the wooded and poorly drained swale, is undeveloped. This park is little used. Part of the fair grounds in the western part of the city serves as a school athletic field.

Gulfport's crowning achievement in line of recreation facilities is the small craft harbor located on the east side of the anchorage basin. Created in 1937 with the aid of P.W.A. funds, the project cost \$350,000.¹ The barrier forming the harbor is a 40-foot wide extension of 20th Street. The seaward side is reinforced by a concave seawall. At the outer end of the barrier a large building houses the Yacht Club and Municipal Clubhouse. On the south side of the clubhouse is the bathing pier and beach. On the inner side of the barrier four piers jutting into the harbor are used for tying-up small craft. The park area at the base of the harbor is used as a driving range.

Creation of this municipal facility for water sports tends to obviate the need for private as well as public piers elsewhere along the water front in Gulfport. While such piers are convenient as boat docks and for bathing, they are subject to damage by storms and expensive to maintain. Those not in good repair are eyesores and depreciate the scenic quality of the shoreline. The new harbor is a boon to recreational boating for local citizens and considerably enhances Gulfport's ability to attract boating enthusiasts during the long summer vacation season.

The American Legion hall, a block west of West Ward school, and the Elks Club, which occupies a superb site on East Beach, complete the list of primary communal establishments of a recreational nature.

¹Mississippi, A Guide to the Magnolia State, op. cit., p. 199.

CHAPTER IV

LAND USE IN THE BILOXI SECTION

The Biloxi Section extends from the Gulfport Section on the west for about 14 miles along the Sound to the eastern limit of Ocean Springs in southwestern Jackson County (Fig. 1). The entire section is peninsular in character for Biloxi occupies the eastern half of Biloxi peninsula which is formed by, and separated from, the mainland to the north by Back Bay of Biloxi, and Ocean Springs occupies the tip of a triangular peninsula formed by Old Fort Bayou on the north and the waters of the Sound on the south (Figs. 6 and 7). As already mentioned the peninsular aspect of the sites has had a bearing upon the origin of settlement and the manner and pattern of latter development. Of the estimated 21,000 inhabitants of the Section, 17,500 are in Biloxi, 1,800 are in Ocean Springs and the remainder in the unincorporated zone that lies between Biloxi and the Gulfport Section. By its size, central position, and diversity of functions, Biloxi is the dominant urban settlement in the Section and center of attention in the following analysis of urban land use.

Broad Pattern of Land Use

In most general terms the pattern of land in urban uses falls into three parts that correspond roughly with the political pattern, namely, (1) the unincorporated inter-urban zone at the west end of the Section, (2) Biloxi, and (3) Ocean Springs. The pattern of used land in the inter-urban zone is essentially the same as in Mississippi City (Chapter III) wherein practically all occupied space is confined to the shoreline properties (Fig. 6). The land is not generally intensively used and vacant parcels are interspersed among the properties in residential, tourist-commercial, commercial, recreational, and communal use. Back from the shore line almost all of the land is unused except for a few acreages aligned along the Pass Road and the large parcels like golf courses and the Soldiers Home. Except for the thin fringe

of occupance units facing the Sound, then, the inter-urban zone is more rural than urban and more rural non-farm than rural farm.

According to Table 7 the six square miles enclosed within the corporate limits of Biloxi are 57 per cent used. Distribution of the used land, as may be seen on Figure 6 bears a rough similarity to the pattern of used land in Gulfport in that (1) most of the land south of the Louisville and Nashville right-of-way is occupied, and (2) the principal concentration of used land north of the railroad is near the center of the long axis of the community and adjacent main route leading to Iberville Bridge across Back Bay. Beyond these two general features the similarity in patterns stops and the detail in each case is in harmony with peculiarities of surface configuration. Biloxi's pattern of used land shows close correspondence to the drainage features--chiefly because poorly drained areas are sharply defined.

TABLE 7
EXISTING LAND USES IN BILOXI, 1940*

	Acres	Percentage
Industrial.....	40	1.1
Commercial.....	100	2.7
Residential.....	1,300	36.9
Public and Semi Public....	180	4.8
Streets and Railroads.....	400	10.9
Vacant.....	1,600	43.1
Total.....	3,710	100.0

*Source: Final Report of Basic Comprehensive City Survey of Biloxi, Mississippi. Prepared by the Mississippi Board of Development and City of Biloxi (Jackson: Mississippi Board of Development, 1943), p. 12.

Four large bayous indent the bay shore of Biloxi; two of them reaching about two-thirds of the way across the peninsula to the vicinity of Howard Avenue, the main east-west thoroughfare through the city (Fig. 6). At the northeastern corner of the peninsula, one broad bayou covers an area of about 15 city blocks. All of the surface of this area is idle except for the Louisville and Nashville right-of-way which passes across it on a low fill.

The second large rectangular block of low-lying bayou land lies just west of Crawford Street. The northern half of it is permanently wet and covered with marsh grass; the upper half is a low depression that is inundated during periods of high water in the Bay or abnormally heavy precipitation. The mouth of this bayou, which is unnamed, coalesces on the west with the mouth of Bayou Auguste, a narrow depression that extends inland in a southeasterly direction for about 2,400 feet to the vicinity of Main Street. West of Caillavet Street, Keegan's Bayou occupies a crescent-shaped plot that varies from 200 to about 1,000 feet in width. The upper end of this bayou, between the railroad and Division Street, is a narrow, tree-lined ditch 8 to 10 feet deep. The major part of each of these four bayous is unfit for any type of permanent use and the few roads that cross them are constructed on low fills.

Besides these four irregular tracts of unused land, one large parcel lying between Division Street and the railroad south of Bayou Auguste also is idle. The south half of the tract is slightly lower than surrounding built-up land and the northern half for reasons unknown has not been subdivided; hence it is idle. The northern half has been laid out tentatively as the site of a new athletic field. West of Keegan's Bayou much land entirely suitable for residential or other use, is vacant for lack of demand for residential space at this distance from the center of the city. Elsewhere within areas that are generally well built-up, some plots are unused for lack of streets, and still others are vacant for no apparent reason other than lack of demand.

Within the built-up areas intensity of use varies considerably. The area of most complete use surrounds the vicinity of the railroad station at Reynoir Street, which may be taken as the approximate center of the built-up pattern. Here, both north and south of the railroad, the system of closely spaced parallel streets that characterizes the central two-thirds of the incorporated area, and small lots, have effected a pattern of compactly spaced occupancy forms--residential, communal, commercial, and manufactural. To a degree the intensity of use is augmented also by the narrowness of streets, some of which are barely wide enough for two rows of traffic and a few only wide enough for one. Close spacing is the rule for all the area in this part of town.

south to the beach road. East and west along the beach boulevard, the parcels are almost all used, but being much larger, the cramped aspect of the occupance pattern does not prevail. In the more remote parts of the city, especially in the northeastern and northwestern quadrants, settlement forms are very widely spaced, a common feature of the inhabitable peripheral parts of all urban communities.

Distribution of the primary types of land use has already been touched upon in part in Chapter I. Industry is localized largely along East Beach Avenue near the tip of the peninsula, and along the central segment of the Back Bay shore. Commercial functions are concentrated in three parallel alignments near the heart of the built-up area. The only other noticeable concentration of land of a particular use-type is in the northwest portion of town where a large area is in various communal uses.

In marked contrast to Biloxi and other towns along the strand, the gross pattern of occupied land in Ocean Springs exhibits only slight adjustment to the peninsular nature of the site or to the three miles of Sound and bay frontage. The main body of used land is in the center of the corporate area around the railroad station and nearby junction of main thoroughfares to the west, north and east. A surprisingly small amount of the beach property is improved and very little second-line property is in use except near the center of town. On the whole the pattern of streets is rectangular with noticeable irregularity in spacing of both north-south and east-west members. Spacing in the southern part of town obviously is in response to the drainage pattern.

Types of land use in Ocean Springs are not diverse. Most of the space is residential and the remainder is about equally divided between commercial and communal uses. Industry is of slight significance.

Land in Industrial Use

Land used for industrial pursuits in this Section is almost entirely confined to Biloxi, where, as mentioned earlier, two segments of the shore are largely occupied by seafood packing establishments and ancillary industrial works. A third and much smaller industrial area is located along the railroad near De-launey Street (Fig. 12). These three areas total 40 acres or only

1.1 per cent of the total land in the city (Table 7)--a surprisingly small amount of land considering that manufacturing supports 40 per cent of the city's gainfully employed (Table 1), and is probably directly or indirectly responsible for the livelihood of at least half of the total population.

Besides organizations dealing directly with seafoods, other factories produce material and equipment used in connection with seafood processing or utilize by-products of the packing plants. They include boat-builders, cooperage, barrel and box manufacturers, ice plants and grit companies. Other industry in the city not related to seafood manufacturing includes three planing mills, a beverage works and a dairy. Thus Biloxi's industrial complex is almost entirely based upon its function as a seafood processing center, which if eliminated, would reduce the city's industrial output almost to nil.

Land used for transportation also is of little importance. Apart from the right-of-way of the Louisville and Nashville, which extends the length of the Section, a freight house and one short spur near the station in Biloxi, no land except streets is in transportation use. For a number of years seafood plants in Biloxi, which are vitally dependent upon rail transportation for marketing their products, were linked to the Louisville and Nashville by electrified trolleys. Remnants of the lines still exist on Reynoir and Oak Streets, but the seafood plants now employ truck transportation. Although the municipal air field in the northwestern part of Biloxi is logically an element in pattern of transportation land use, in actual practice it functions only as a training and emergency landing field.

Seafood Industry

Packing plants.--At present preparation and packing shrimp and oysters is represented by ten factories that specialize in packing and five other organizations that function only as shippers¹ of raw shellfish. Five of the packers and two raw shippers are located in the East Beach district; four packers and

¹The distinction between canning plants and raw shippers is not clear cut as many of the packing plants ship raw stocks in varying quantities depending primarily upon the amount and quality of the catch.

three shippers are in the Back Bay district; one packer is situated at the east end of town near Point Cadet (Fig. 6).

The East Beach seafood packing district is an irregular strip of made-land that extends for about 3,000 feet along the south side of East Beach Avenue from Oak Street to the east end of the peninsula. Made-land has been necessary in this locality in order to span the shoal water near shore and place the unloading wharves within reach of navigable water. At first the made-land consisted of a series of nine finger-like projections of oyster shells that extended out from the main land for varying distances up to 1,000 feet. As excess shells and other refuse have accumulated, the intervening water bodies gradually have been filled in so that now all but the central portion of the district is made-land, and the irregular shoreline averages about 700 feet south of the original beach.

Intensity of land use in the district is low. The majority of the space used for buildings is taken up by packing plants, which, because they need more room for equipment and for storage of undistributed stocks, are three to four times the size of buildings used by raw shippers. The average raw shipper's establishment measures about 40 feet in width by 60 feet in length. Altogether the canning and shipping plants and all associated buildings occupy probably less than a fourth of the surface in the district. Most of the factories and shipping houses are located at the outer edge of the district adjacent to wharves, and land near Beach Avenue is generally vacant except for roadways leading to the plants. The areas recently filled in are entirely unused. Some of them are still too low and wet to be utilized for any purpose.

Besides buildings in which the shellfish are processed and packed, the district contains five oil wharves, a shell grit plant, a machine shop, cooperage, one boat manufacturer, two boat repair docks, a couple company-owned grocery stores, and two large banks of company houses (camps) for employees. What with such heterogeneous collection of old, unpainted and irregularly spaced buildings set amid barren stretches of oyster shells, the appearance of the district is generally unattractive. Not only is the area unappealing to the eye, but the odor that issues from the partly decomposed residue that clings to freshly deposited shells is a further disagreeable characteristic and trade-mark of

all seafood processing establishments.

The Back Bay district differs from the East Beach district in that it has fewer plants, they are more widely spaced, and all are built at the edge of the main land. The westernmost plant is located just east of the approach to Iberville Bridge at Reynoir Street; the easternmost is beyond the broad entrance to Bayou Auguste near the north end of Crawford Street. Made-land has not been required along this portion of the bay because of deep water close to the shoreline. The plant at Point Cadet is also situated on the mainland at the edge of the bayou. Boats reach it by a channel dredged through the shallow water along shore.

With ten of Mississippi's twelve active seafood canneries and all of the raw shipping firms, Biloxi is the ranking shrimp and oyster collecting and processing center on the Gulf Coast if not in the nation. As was pointed out in Chapter I, Mississippi ranks first among the states in output of canned oysters and second in quantity of canned shrimp. Louisiana normally packs about twice as much shrimp per season and about a third as many oysters as Mississippi. But the Louisiana canneries are widely dispersed among several delta communities with no one place--not even New Orleans--having as many as Biloxi. Hence it appears reasonable, in the absence of data of seafood pack by towns, to credit Biloxi with first place in the industry.

As was suggested in Chapter II, the only reason for the localization of a majority of seafood establishments along the Sound in Biloxi is the quality of the harbor which provides ample sheltered docking space for boats and for factories. As may be seen on Figure 1, East Beach is in the lee of Deer Island, a long narrow sandbar that lies athward the mouth of the bay. The island is a barrier to waves and is close enough to the main land so that water of the channel that separates it from the tip of the peninsula is always quiet. Back Bay is also a relatively smooth body of water unaffected by waves and subject to high water only occasionally when strong, persistent southerly winds cause water to pile up in the bay. This phenomenon is not a frequent occurrence nor is it a hazard of marked importance because the land in vicinity of the seafood plants is at least 15 feet above mean water level and is never flooded. The first seafood plants in the city were located in these two sections of the

shoreline and ever since the areas have been used for little else. Indeed, there are many suitable factory sites along the Back Bay and East Beach shores that never have been utilized.

Proximity to fisheries is, of course, the raison d'être for the seafood industry all along the Sound, but at the outset it was not a factor that favored Biloxi over the other communities. Indeed, as was mentioned earlier, at the beginning of commercial sea fishing when the small boats that were employed for tonging oysters did not range far from shore, Biloxi was a less desirable place for a factory than Pass Christian or Bay St. Louis, which are only about four miles from Square Handkerchief reef, the largest oyster bed in the Sound. Subsequently, when introduction of large oyster dredges made feasible exploitation of the extensive oyster reefs beyond the Sound in the northeastern quarter of the Mississippi River delta and nearby Chandeleur Islands, Biloxi's earlier positional disadvantage was removed. The northern tip of the Chandeleur's is about 25 miles directly south of Biloxi and the delta reefs are about the same distance from Bay St. Louis and Pass Christian. Currently about 35 per cent¹ of the oysters landed in Mississippi are taken from the Sound and 65 per cent from Louisiana water. All of these reefs are closer to canneries on the Mississippi coast than to similar establishments in Louisiana, consequently, oyster packing and shipping have always been a speciality of the Mississippi factories.

Biloxi is also as well located as any other place along the Gulf Coast to share in the shrimp fishery. Shrimp range widely in the inshore and open gulf waters and shrimp canneries dot the coast all the way from Appalachicola, Florida to Aransas Pass, Texas. The bulk of the catch landed in Mississippi is taken from Louisiana waters about 25 to 40 miles distant.

As was also pointed out in Chapter II, the canning companies in Biloxi currently enjoy the advantage of a good labor supply. Such has not always been the case. In 1870, about the time the first commercial seafood plant started in Biloxi, the town was only half the size of either Pass Christian or Bay St. Louis, and the least desirable place of the three in which to lo-

¹R. H. Fiedler, The Fishery Industries of the United States, 1938, op. cit., p. 247.

cate a factory that required much labor. As the industry grew, in order to circumvent the labor problem, the canning companies began to import workers from Baltimore, which, at that time, was the principal oyster canning district in the country. These laborers were largely Polish families that were transported to the coast each autumn in freight cars and returned in the spring at company expense. This practice continued until 1925 when an Interstate Commerce Commission ruling forbade transportation of passengers in freight cars at greatly reduced rates.¹ Since 1925 Acadian French from southern Louisiana and a few people left unemployed by closing of lumber mills in southern Mississippi have moved to Biloxi to supply the labor demand.² Thus it has only been for the last 15 years that Biloxi packers have had sufficient local labor to meet their demands. Therefore, as a factor in plant localization, labor has been effective for a relatively short time, and that fact, in turn, adds support to the contention that originally and throughout the major period of development of seafood packing along the Sound, the only telling advantage that Biloxi possessed that other towns did not possess, was the superior site for factories and for boat anchorage.

Seafood packing is a seasonal business that functions about nine months per year from September through May. Within the season operations normally fluctuate greatly due to variations in supply of oysters and shrimp. Plant workers, most of whom are women, are therefore irregularly employed as well as poorly paid. The average annual income in 1939 for the 1,433 employees of all manufacturing plants in Biloxi was about \$250.³ If data were available for seafood workers alone, the figure would doubtlessly be even lower. This means that the developmental influence of the seafood industry upon the city is considerably less than it

¹Harbert B. Longest, "The Social and Economic Aspects of the Seafood Industry in Biloxi, Mississippi" (Unpublished Master's thesis, Department of Sociology, Mississippi University, Oxford, Miss., 1934), p. 73.

²Ibid., p. 74.

³The total wages paid by 29 manufacturing firms in Biloxi to their 1,433 employees is only 75 per cent of the total wages paid to 840 factory workers in Gulfport. Computed from Sixteenth Census of the United States: 1940. Manufactures, 1939, Vol. III, op. cit., p. 535.

would be if all workers were well paid and permanently employed. It means also that the amount of space required for housing is lower than would be needed if all employees were heads of families. These aspects of the industry are strongly reflected in the poor quality of housing in the eastern and northern parts of town which are populated primarily by seafood workers and fishermen.

Over and above low wage scales and seasonal character of the business, the industry as a whole never has been especially prosperous and packing plant failures have been numerous.¹ Yearly fluctuations in supply of shrimp and oysters and the consequent deleterious effect upon market price of canned goods have periodically bankrupt many of the marginal producers. And up to 1934, when a government food inspection service was inaugurated, many companies had lost heavily through seizure of spoiled shipments. Although the latter difficulty has been almost completely eradicated, and the general trend in output of canned goods is upward,² the background of economic instability is generally reflected in the appearance of the plants and of the East End and Back Bay residential communities.

Grit factories.--The only seafood by-product industry in Biloxi are oyster shell crushing firms. Three grit companies operate in intimate areal, functional, and financial association with the packing plants. The older two in the Back Bay district are owned and operated as subsidiaries of packing companies. The newest shell company is an independent organization located at the eastern end of the East Beach district.

Supplies of shells are procured through contracts with canneries. Normally a maximum part of the shells from each seafood plant is disposed of in this manner.³

¹Longest points out that over an unspecified period of time prior to 1934, 23 packing enterprises in Mississippi failed while 16 continued to operate. Longest, op. cit., p. 6.

²Shrimp catch landed in Harrison County increased from eight million pounds in 1918 to 22 million pounds in 1938. Fiedler, op. cit., and earlier annual reports of Commissioner, Bureau of Fisheries.

³Louisiana law requires that 10 per cent of the shells taken from oyster beds be returned each season as oulch upon which the next crop of young oysters may settle. Mississippi's Fishery Code requires that 25 per cent of the shells be returned

The process of reducing oyster shells to any of several marketable forms is relatively simple and the establishments do not occupy much space. The chief two pieces of equipment are a kiln for drying shells and a crusher. The shells are thoroughly kiln dried to remove moisture and organic materials, run through the crusher, sifted and bagged. The two principal products are poultry grits of various sizes and shell dust. The latter is about 90 per cent calcium carbonate and is an ideal fertilizer for lime deficient soils. In 1936 Biloxi shell companies produced 17,060 tons of grits and 2,220 tons of shell lime which together represented almost five per cent of the nation's total output of these goods.¹ Practically all of these products are marketed in central United States.

Other Industry

Boatyards.--In 1938, two hundred twenty-five motor vessels, five sailing vessels of about 12 tons net each, and 764 small boats with or without motors were engaged in the fishing business in Harrison County.² Most of these craft were operated by Biloxi fishermen and the majority were built in Biloxi. The number of pleasure craft that have been constructed in Biloxi boatyards is unknown.

Largely in response to the requirements of fishermen, Biloxi has been a boat-building center since before commercial fisheries were well developed. Small boats are customarily built by a number of people at a wide variety of locations within the city. It is a sort of backyard activity in which most any one with the "know how" is privileged to participate. Larger motor vessels of the type used to dredge oyster, haul otter trawls, and freight shrimp from catching boats to factories have been produced by a limited number of boat-builders who have long specialized in the business. Surprisingly enough, only two such firms were in operation in 1940 and both occupied exceedingly small

each season. Information from Mr. Chester Delacruz, Biloxi factory manager.

¹Fiedler, The Fishery Industry of the United States, 1939, op. cit., p. 250.

²Ibid., p. 465.

parcels of land.

Covacevich's boatyard has 92 feet of frontage on East Bay View Avenue at the promontory east of the mouth of Bayou Auguste. This company in normal times produces trawlers for the fishing interests, but in late 1940 began work on a government contract for 165-foot wood sub-chasers. The yard employed eight workmen including two who formerly operated their own boatyards.

Toche's boatyard, which is about the same size as Covacevich's, is sandwiched in between the seafood plants in the center of the East Beach packing district. In 1940 it was engaged in filling contracts for fishing craft and employed about eight to ten workmen.

In 1940 only 54 persons in Biloxi were engaged in manufacturing "transportation equipment (except automobiles)."¹ This indicates that although boat-building is often referred to locally as Biloxi's second largest industry, it is exceptionally small compared to seafood packing whether judged by employment or by the amount of space utilized.

Yards in which boats are hauled up for routine repairs, painting and the like are more numerous than places of boat manufacture. Two such yards are located on East Beach; two others are on Back Bay. Three of them are operated by seafood plants; the other is privately operated.

Ice plants.--Two ice plants in Biloxi have a total capacity of about 200 tons daily. This is an extraordinarily large capacity for a city of 17,000 inhabitants. The majority of it is used by seafood shippers for packing shrimp and by boats engaged in shrimp fishing. One of the essential requirements for successful shrimp fishing is that the catch be packed in layers of ice and kept thoroughly chilled until delivered to the packing plants. Depending upon their size, vessels engaged in shrimping use from four to 15 tons of ice each trip. The largest of the ice plants is located on Delauney Street south of the railroad tracks (Fig. 12). The other plant is on Back Bay near the seafood factories. A third fairly large ice manufacturer, located in Ocean Springs, also occasionally supplies ice to fishing boats and shippers as well as meeting local household and commercial demand.

¹Sixteenth Census of the United States: 1940. Population, Vol. II, Part 4, op. cit., p. 304.

Wood products plants.--Four small establishments produce lumber and wood products of various types for the local market. Peyronnin Cooperage Company, a branch of a New Orleans firm, occupies a large building near the northwest corner of the East Beach seafood district. It fabricates boxes, barrels and various other crating devices for shipment of seafoods.

The largest manufacturer near the railroad station is Brielmaier's millworks located across the tracks from the ice plant (Fig. 12). This plant specializes in prefabrication of a variety of frames, doors, sashes, and other building materials employed in the construction business, and is typical of factories of similar type common to most small towns. The other two plants are small saw and planing mills that do custom work for local lumber companies and boat-builders. One also constructs boxes for local seafood and other shippers.

Other manufacturing plants.--Arcadia-Ness Dairy Company, the largest on the Mississippi coast, is located on West Howard Avenue (Fig. 12). The plant, which has been in operation under various owners since 1925, gives employment to about 50 people. It deals primarily in fresh milk, but also produces ice cream and some cheese and butter. Raw milk is drawn from all three coast counties and from Stone and Pearl River counties (north of Harrison and Hancock counties, respectively), and deliveries of milk and other products are made to all towns along the Sound. It is estimated that the company supplies over a third of the pasteurized milk consumed in towns from Pascagoula to Bay St. Louis.¹ Butter is produced only in summer when improved grazing conditions increase the supply of milk above local fresh milk consumption.

Barq's bottling plant, located near Brielmaier's mill, produces a soft drink that is distributed in southern parts of Alabama, Mississippi and Louisiana.

Shearwater Pottery Company, located at the rear of a beach residential property in southeastern Ocean Springs, is a family operated concern and only handicraft industry along the Sound. Some of the throwing clays are procured at Lucedale, Mississippi, about 50 miles away, and other clays are imported from Kentucky, Tennessee, and North Carolina. The artistically designed vases and ornamental figurines are widely advertised and sold throughout

¹Interview with Mr. G. Bone, Manager.

the country. It is the only active factory in Ocean Springs and a first-class example of an industry in which the main product for sale is artistic ability. Because of the distinctiveness and originality of the products, the company is given wide publicity and attention that far exceeds its importance in the local economy.

Land in Commercial Use

Land utilized for commercial purposes in this Section is concentrated in Biloxi, the center of population and main local market. Ocean Springs is a minor shopping center. Except for establishments serving tourists very few commercial enterprises are resident in the inter-urban area west of Biloxi. Within Biloxi, where 2.7 per cent of the land area are used for all types of business (Table 7), the main commercial section is not a solidly built-up nucleus of business establishments such as characterizes the Central Business District of Gulfport (Fig. 5, Inset). Instead, as was pointed out earlier, Biloxi's main business district features a tripartite layout of commercial forms with each part dominated by functionally different sorts of businesses (Fig. 12). Thus West Howard Avenue, between Main Street and Cuevas Street is the primary retail street; two blocks farther south, West Beach Avenue is the primary tourist-commercial street; and, the space facing the railroad right-of-way is a combined wholesale-storage-manufacturing-heavy retail goods district. These alignments of business firms are separated from one another by land in residential uses. Elsewhere in the residential areas neighborhood stores and various other retail and service establishments are distributed in a pattern that in a general way conforms to the density of population. Of the three main functional categories of commercial firms, retail sales and services are most numerous and occupy the most space. Tourist-commercial forms are far less numerous but they occupy almost as much land. Wholesale organizations are not numerous nor do they occupy as much space as either retail or tourist facilities.

Retail Establishments

Main retail section.—The main retail section on West Howard Avenue contains the majority of shops and services that serve

the local population and a few that capitalize in some degree upon the tourist market. Concentration of the retail section in this part of town appears to have been an early day response to the fact that Howard Avenue was the only east-west thoroughfare that led from the ferry at the East End the full length of town, intersecting all north-south streets, and connecting with the road to Pass Christian. The sector between Main and Caillavet Streets was thus the area most readily accessible from all parts of town and natural meeting place for north-south and east-west moving traffic.

As in Gulfport, localization of types of shops and services within the retail section is not pronounced. One point on West Howard Avenue is about as convenient as another from point of movement of pedestrian traffic, consequently, drug stores, clothiers, cafes, personal services, chain stores, and markets are intermingled. Difference between types of establishments on Howard Avenue as compared to those on adjoining side streets, is likewise, not pronounced except in case of the automotive group and others that require much space. The only service stations and garages are at both ends of the retail section or on cross streets. Retail and service establishments that require much space tend to be situated at the north edge of the retail section. Lumber yards, storage and transfer firms, and machine shops are grouped near the railroad to take advantage of the transportation service as well as cheaper land.

Influence of tourist trade upon the composition of Biloxi's main retail section is not especially evident. Most firms do a small amount of business with tourists and vacationists, but the only establishments which by their number reflect tourist business are newsstands. Five newsstands on West Howard and one on Lameuse Street are a definite indication that the town is frequented by out-of-town residents who have much free time for reading. Small cafes and taverns are likewise more common to the retail section than they are in Gulfport, but as was mentioned in Chapter I, this appears to result from the absence of a prohibition ordinance comparable to the one that obtains in Gulfport. To some extent, however, it is also a reflection of the tourist trade.

Quite apart from the fact that the retail section is a single street development, its appearance is totally unlike that

of Gulfport. In the first place, the buildings are older. Most of the business structures in the heart of town were built prior to 1900. The typical building is a red brick structure with much ornamental detail not found on modern buildings. Second, the buildings are generally smaller. None has more than three stories and most of them have either one or two levels. Third, individual shops are smaller. The town has only one department store and with possibly one exception all retailing is confined to ground floor levels. Fourth, streets and sidewalks are narrow. West Howard Avenue is only 28 feet wide from curb to curb, and although the set-back of buildings varies for some blocks, generally the sidewalks are only six to eight feet wide.

Second and third floor levels in almost all buildings are devoted to offices. Very little upper story space is in residential use. The only commercial hotel--an old, third-rate establishment--is on Reynoir Street opposite the railroad station.¹

Intensity of land use is reasonably high. Only three shops on West Howard are unoccupied and only three lots are vacant. One of the unoccupied lots is a parking space for which there is an ever increasing need. Intensity of use, however, does not compare with Gulfport's retail core because of the larger proportion of single story buildings especially toward the west end of the section, and the absence of tall buildings.

Outlying retail establishments.--Outlying business establishments in Biloxi are most numerous in three residential neighborhoods, namely, (1) the East End seafood workers district, (2) the Negro quarter in the center of town north of the railroad, and (3) along Bay View Street near the canning plants. The shops in each of these areas are widely spaced; only the group of stores along East Howard Avenue is sufficiently well concentrated to be called an outlying shopping center.

Retail firms in the East End or "The Point," as it is often called, supply three primary demands: (1) household requirements, (2) fishing boat requirements, and (3) requirements of travelers on U. S. 90. Most of these demands are satisfied by small grocery stores of which there are 16 between Oak Street and

¹The Avez Hotel on Magnolia Street (Fig. 12) is a tourist hotel that is set back toward the middle of the block and does not constitute an integral part of the Howard Avenue retail section.

the end of the peninsula, or about one for every block. A few of the grocery stores, including the two company-owned establishments in the canning district, specialize in provisioning shrimp boats.¹ These stores are a sort of limited purpose ship chandlers. Normally they do little business with residents in the neighborhood because of the difference in type of goods stocked.

The line of sales and service establishments on East Howard Avenue continues west of Oak Street in a discontinuous fashion to the main retail section at Main Street. Business firms at the east end (east of Crawford Street) include four grocery stores, five gas stations, nine cafes or roadside lunch stands, a cleaner, theater, electrical shop, clothier, garage, drug store, and two small tourist courts. This list pretty clearly indicates the dual purpose character of the businesses along the highway.

Although population is relatively dense in the residential neighborhood lying between the railroad and Division Street at the center of town, outlying business firms are not particularly numerous partly because the area is fairly close to the main retail section. The chief collection of retail outlets is on Main Street in the heart of the Negro quarter. They include groceries, eating and drinking places, and a number of personal services including cleaners, barber shop, funeral parlor, and theater. A secondary alignment is noticeable on Division Street, the main east-west thoroughfare in the central part of town.

Retail establishments at the north edge of the city along Bay View Street serve the residential area and employees of seafood plants. One company-owned store specializes in the boat trade. Commercial establishments on Caillavet Street at the approach to Iberville bridge include two gas stations and a large feed and seed firm which serve the farmers residing north of Back Bay.

As is the case in Gulfport, neighborhood stores are not common in the high class residential districts of Biloxi. Low population density, high price of land, and voluntary zoning against such nonconforming pursuits all weigh against use of good residential land for such purposes.

¹Shrimp boats normally stay with the shrimp schools for periods ranging from a few days up to three weeks. The catch is periodically transferred from the trawlers to larger freight boats and brought to the canneries.

Use of property for neighborhood stores is one aspect of the land occupancy pattern that is greatly affected by the city zoning ordinance passed in May, 1940. The pattern of land zoned for commercial use in outlying parts of the city is fairly well adjusted to the present pattern of commercial use. Many of them being rather transitory, part-time, low-profit endeavors, the isolated neighborhood shops not located on commercial zones will eventually disappear altogether from the pattern of occupancy forms.

Ocean Spring's retail section.--The shopping center in Ocean Springs bears about the same functional and spatial relationship to Biloxi that Long Beach's retail section bears to Gulfport (Figs. 1, 5, and 7). Both are essentially outlying collections of stores and services that serve the local and nearby rural inhabitants, and each is about four miles from the business district of its larger neighbor. Ocean Springs, however, has always been a somewhat more important trade center than Long Beach because, until Biloxi Bay was bridged, the village dominated rural trade in southwestern Jackson County; whereas Long Beach always had to share the local rural market with Gulfport. Since Iberville Bridge was built in 1925 and War Memorial Bridge was opened in 1930, Ocean Springs has not had a positional advantage, and the number of vacant store buildings attests to a gradual decline in retail activities.

Vacant store buildings are mainly on Washington Street north of the intersection with Government Street--a fact that reflects the change in traffic pattern since War Memorial Bridge was constructed. Between 1925 and 1930 all traffic to Biloxi was routed from the intersection northward across Old Fort Bayou and into Biloxi via Iberville Bridge. Since U. S. 90 has been routed over War Memorial Bridge the distribution of retail establishments has been slowly reoriented to fit the traffic pattern. Most of the reorientation has been in form of new service stations and other tourist-commercial businesses on Porter Street.

The chief retail stores and services include a bank, three general stores, one each of feed, variety, drug, and hardware dealers, a cleaner's, restaurant, several service stations, three small garages and a theater. Most of these businesses are on Washington Street, except the service stations which are concentrated on Government and Porter Streets.

About half of the store buildings are built of brick or masonry and half are frame, and except for the bank, all are single story structures. As may be seen on Figure 7 most of the buildings are not built flush with one another, a feature which indicates the immaturity of the business district.

Of all the retail outlets, the feed store on north Washington Street is the most singular as it emphasizes the town's long standing function as a rural trade center. Actually the firm is a co-operative enterprise run by an association of poultrymen to manage the collection and distribution of their produce and to purchase feeds. The association has a membership of 146 poultry raisers 90 per cent of whom live in Jackson County. Monopolizing the coast's hotel and store market for eggs, this agency sells about 50 per cent of its produce to customers along the Sound, and the remainder is shipped to cities in the Northeast.¹ Although the building does not utilize much space, as a combined wholesale and retail outlet it is one of the busiest establishments in town and one that helps draw other rural trade into the community.

Wholesale and Storage Establishments

In addition to the five seafood shipping houses that were mentioned in conjunction with seafood manufacturing and which are, in reality, wholesaling establishments, Biloxi has a few wholesale distributors of oil and gas, beverages, and tobacco and candy. Three of these firms, including two bulk oil dealers and the tobacco and candy distributor, are located near the intersection of Caillavet Street and the railroad (Fig. 12). The coca cola warehouse and distributing point is at Division Street just west of Caillavet Street and the beer wholesaler is on Caillavet Street midway between the railroad and Division Street (Fig. 6). The other wholesale firm is the Standard Oil Company located on Back Bay north of the entrance to Bayou Auguste. Oil and gas are received at the terminal from Louisiana refineries by barge and trucked to lesser bulk stations in Bay St. Louis, Gulfport, and other towns between the coast and Hattiesburg, 60 miles to the north (Fig. 9). This is the only instance in which the port of Biloxi functions as a receiving and distributing center for goods

¹Information from store manager.

destined to be consumed in the coastal area. Standard Oil and the tobacco and candy firm are the only wholesalers that serve the majority of coastal communities; the others distribute to the local market. The long rectangular parcel of Keegan's Bayou is a junk yard.

As may be seen on Figure 12 space used for storage is also localized in the center of town near the railroad. The building between Magnolia and Delauney Streets is used for general storage by local retail merchants as is the building on La-meuse Street at the right-of-way. The latter occupies only the northern third of the area indicated; the remainder is vacant. The large plot on Cuevas Street is a temporary storage yard for automobiles and is not intensively used. Other storage places are used primarily by transfer companies and the railroad.

Tourist-Commercial Establishments

Landscape manifestations that the Biloxi Section is a resort area and that Biloxi is a resort town are numerous. Hotels, tourist courts, and tourist homes are located at many points along the shore from one end of the Section to the other. Road-side stands, restaurants, and service stations are further indication that the role played by the tourist is second only to sea-food in Biloxi's economy.

Hotels.---Of all tourist-commercial enterprises the hotel is the oldest type of residential accommodation and one most typical of Biloxi. Seven of the 11 hotels with over 50 rooms in this Section are located in the city. Four of them are in the tourist-commercial area south of the main retail section (Figs. 6 and 12); two are on the beach farther west; and the seventh is on East Beach Avenue. The others are distributed as follows: The Edwards House is on the beach at the south side of Ocean Springs; Sunset Point Inn is part of Gulf Hills subdivision, which is located northwest of Ocean Springs (Fig. 7); and the Edgewater Gulf and Broadwater Beach are situated in the inter-urban zone west of Biloxi. With the exception of the Avezel, in downtown Biloxi, all are located on the waterfront; nine face the Sound, whereas Sunset Point Inn faces Back Bay.

Besides variations in size and differences in site, the hotels are also unlike in type and cost of accommodations, and,

therefore, they differ markedly in class of clientele and in season of maximum business. They also vary as to age and type of structure. Edwards House in Ocean Springs and the Riviera in Biloxi are old frame buildings that date from before the turn of the century. Both are well preserved and age appears to have little effect upon their popularity. Most of the others are products of the building boom in the late 1920's and are modern, fireproof structures. They include the Avelez, Buena Vista, Tivoli, Edgewater Gulf, and Sunset Point Inn. The Broadwater Beach, the only hotel built in the decade just closed, was opened in 1940.

The Edgewater Gulf Hotel was built in 1925-26 as part of an extensive development that included an exclusive residential subdivision that joins the hotel grounds on the east and an 18-hole golf course that lies north of the railroad (Fig. 6). The 300-room hotel building and largest along the Coast, is a five story, stucco structure oriented with the shoreline so that every room presents a view of the Sound. The hotel is relatively expensive, and, although there is a pier, the beach is not attractive; consequently, the best season is from January through Easter during which time wealthy tourists come to play golf and Northerners stop en route home from the winter in Florida.

Gulf Hills is a similar sort of exclusive real estate development in which land between the fairways of an 18-hole golf course is subdivided into lots for residential use. During the first five-year period after the subdivision was opened in 1928 about a dozen modestly expensive winter homes were built by wealthy Northerners from such places as Chicago, Ohio and New York. None has been added since. The Inn, which has 68 rooms in 13 buildings of Spanish style architecture arranged about a patio, is situated on Perdido Bay adjacent to a yacht basin (Fig. 7). It is one of the more expensive resorts along the Sound, and, like the Edgewater Gulf, is patronized primarily by northern golf fans from February through April. Most of the guests are repeaters and there is no transient trade. The project was designed to attract a wealthy clientele interested in golf, hence location away from the beach and main highway is not a disadvantage.

Gulf Hills and Edgewater Gulf are comparable to the Inn-by-the-Sea and Pine Hills (Chapter II) in that all were boom-time promotional schemes in which recreational use of land was combined

with residential use in the hope that the sport would carry the development. Except for the Inn-By-The-Sea, none has been particularly successful; Pine Hills was a complete failure, and the residential subdivisions at Gulf Hills and Edgewater Gulf have failed to justify their existence. Although there is little doubt that each of these developments represents the most ideal use to which the land could be put, they were all premature, and being aimed at a very limited market, that grew even more limited during the business depression of the 1930's,¹ they have not prospered. Failure of the two subdivisions to flourish stresses the fact that as a winter resort, the Mississippi coast is a marginal area that is not sufficiently warm throughout the winter months to induce people to build winter homes. Individuals who can afford winter residences can afford to build them in southern Florida where the incidence of freezing temperatures in December, January and February is much lower than on the northern Gulf Coast.

Hotels on the beach in Biloxi are both summer and winter hotels and the larger ones also make a specialty of catering to conventions during the winter and slack spring season. The Buena Vista, the largest with 250 rooms, has two special features not possessed by the others, namely, a large pavilion on the beach (Fig. 12), which is used as a convention hall and for dancing, and ten modern brick cottages built along the east side of the grounds in 1940 for the benefit of guests with children or others who desire kitchen facilities. The former is a big asset for the convention business and the latter is a concession to the inroads tourist courts have made upon hotel trade in recent years.

The New Biloxi and White House hotels located in the superior residential section west of the Buena Vista have 100 and 150 rooms, respectively, and are in the same expense class as the Buena Vista. They also have peak seasons in summer and winter.

The three other hotels facing the beach--Riviera, Wachenfeld Beach Apartments and the Tivoli--are smaller and less expensive than the larger hotels farther west along the beach. The latter two were built in the 1920's. All three are popular with

¹The Edgewater Gulf subdivision is now separate from the hotel and the \$10,000 building restriction has been removed. Interview with the Manager, Edgewater Gulf Hotel.

winter and summer vacationists. The summer business is especially important for the Riviera and Wachenfelds because they are in the midst of the commercial tourist attractions that line West Beach Avenue from Main Street to Cuevas Street (Fig. 12).

Relationship of site and nature of the tourist trade is illustrated in case of the Avelez Hotel, a 100-room structure at the south edge of the retail section between Magnolia and Croesus Streets. Although used the year around by transients and vacationists, it is primarily a winter hotel with a relatively light summer trade. A beach site is indispensable for a strong summer trade with all types of tourist residential facilities.

The Broadwater Beach is the newest and most expensive of all the hotels. The accommodations are all single cottages or duplex apartments and has the appearance of an exclusive tourist court. A central building contains the dining room, night club and gaming room. The latter, so it is alleged, is the main purpose and source of revenue for the establishment.

Edwards House in Ocean Springs has long been the residence in winter and summer of customers that prefer the quiet atmosphere of a smaller town and location off the main traveled highway.

Tourist courts.—Of the 21 tourist courts in this Section, seven containing a total of 126 cottages, are located in the inter-urban area at the west, 11 with 107¹ cottages are in Biloxi, and three courts with about 15 cottages are in Ocean Springs (Figs. 6 and 7). One of the courts in Biloxi has not been modernized since it was built in 1926 and now no attempt is made to accommodate overnight trade; the space is leased to parties wishing cheap quarters for long periods. Another of the establishments west of Biloxi contains six small houses that are rented only on a long-term basis. Hence, only 19 of the establishments are in fact tourist courts.

The courts, as is true of those in the Gulfport Section, vary greatly in size. The smallest has only two double cabins and the largest has 30 double and single units. The average court has 12 cottages; those with 8 cottages are the mode. The average size tends to be low because (1) many of them are part-time endeavors, and (2) in Biloxi a city ordinance limits the

¹Does not include 10 cabins operated by the Buena Vista Hotel.

size to 20 cabins, and space limitations along the beach reduces the average to about 9 cabins.

As was pointed out in the preceding chapter most of the courts are of recent origin. Fifteen of the 19 have been built since 1937. Four of those in Biloxi have been completed within the last 15 months. It will be remembered that the cabin business commenced about 1928 in the Gulfport Section where hotels are less numerous. Opening of courts in Biloxi appears to have been postponed by presence of so many hotels and rooming houses. That they finally have been built is an acknowledgment of the rising demand by a wide segment of the traveling public for cabins instead of hotel rooms.

All but one of the courts are located on U. S. 90. The exception is Island View Court on East Beach Avenue. Until recently this property contained three large tourist houses and a trailer camp. The cabins were built to replace the trailer space for which there was almost no demand. Apart from the fact that most of the courts are in Biloxi, the pattern of distribution along the highway has no especially noteworthy features. The group of five courts near the junction of De Buys Street and U. S. 90 (Fig. 6) is not based on any peculiarity of site; rather it appears to be the result of chance selection of sites influenced to a small degree by presence of a good restaurant at the road intersection. The small court farther east, located between the highway and the seawall, was erected just before the county regulation prohibiting use of land south of the highway for commercial purposes became effective.

Tourist homes.--Prior to the time that hotels and tourist courts became the primary manifestations of the resort industry in Biloxi, a high proportion of visitors resided in inns or boarding-houses. Most of these old frame establishments are still functioning. One such establishment is Magnolia Inn located on the Beach Avenue at Magnolia Street. This large square broad-gabled house has been operated as a hostelry since 1846.¹ Besides the old inns many private residences in recent years have been wholly or partially converted to tourist use. Together these two types of accommodation are the most numerous, if not the most con-

¹Mississippi, A Guide to the Magnolia State, op. cit., p. 178.

spicuous or popular type of tourist-residential facility in the city. Twenty-seven such tourist homes are located in the rectangular area south of West Howard Avenue between Main Street and Cuevas Street. Most of the large old inns occupy preferred sites on West Beach Avenue, while the small tourist homes are farther back from the water front. The three structures north of the city hall are very similar in appearance but they are in reality boarding-houses for local residents. In addition to those shown on Figure 12, about a dozen tourist homes are situated on U. S. 90 in the three first blocks east of the city hall, and a similar number are located on West Beach Avenue near the western end of town (Fig. 6).

Other tourist-commercial establishments.—The largest parcel of land anywhere along the Sound devoted entirely to restaurants and service stations is on the beach in Biloxi between Main Street and the Buena Vista Hotel (Fig. 12). All of the south side of West Beach Avenue for a quarter of a mile is utilized by these two types of businesses and both are almost completely dependent upon transient and vacation trade. Altogether, including similar establishments on the north side of the Avenue, there are 18 eating and drinking places and nine service stations. This mushroom development is the heart of the tourist section, and, barring the seafood packing districts, is the most unattractive part of Biloxi. The area has developed, as do most commercial resort places, with little or no planning, and the buildings are cheap structures of varied designs and construction and irregularly spaced. Much of the land in front and between the buildings is employed for parking cars. A couple of the cafes are relatively high-class concerns, but the majority are small seafood shops of the hamburger stand variety. The made-land that lies behind this alignment of establishments from Magnolia Street eastward is variously used. The outer edge is taken up by short piers used by boat rental firms, one oil and gas dock, and by larger recreational piers owned by hotels and the yacht club. A tent and awning dealer provides sail cloth and other boat gear; an auto wrecking firm, operated in conjunction with one of the service stations, and a couple fish markets complete the list of major establishments in the shore area. As may be seen from Figure 12 much of the space is idle or ephemerally used.

Fortunately this motley array of commercial establishments

is limited to one segment of the shore and has not been permitted to spread east of Main Street or west of the Buena Vista Hotel. Almost all of the made-land from the vicinity of Main Street eastward for over a block is public and a portion of it is maintained as an informal park. From the park east to Oak Street, a low seawall forms the outer edge of a privately owned, well-groomed parkway on the south side of East Beach Avenue. Apart from the fact that this area is either in public or private residential use, there is little reason for commercial firms to locate east of Main Street as U. S. 90 turns off the beach at that point and East Beach Avenue is used principally by local traffic.

At the other end of the tourist-commercial beach front, west of the Buena Vista property, a beach is maintained by use of groins and by periodically pumping sand onto the shore. Though privately owned all of this zone from the hotel to a point about two blocks west of Porter Avenue is tacitly a public beach. This short beach is recognized as the primary tourist asset of the city and all commercial occupancy forms have been rigorously excluded from the area. The zoning ordinance of 1940 crystallized this pattern by limiting commercial use of the waterfront to the 2,400-foot section shown on Figure 12.

On the basis of manner of use the Sound frontage in Biloxi may therefore be divided into five distinct sections: (1) the manufacturing district at the East End; (2) the high-class residential district from Oak Street to Main Street that has a low seawall and no beach; (3) the "Coney Island" section; (4) the public beach from the Buena Vista Hotel to the New Biloxi Hotel; (5) the residential area extending to the western limit of the city which is fronted by a high seawall and has no beach.

Elsewhere in Biloxi, notably on East Howard Avenue, restaurants and service stations are fairly common and in the inter-urban zone west of the city there are a few (Fig. 6), but at no place are they especially concentrated and the distribution is essentially the result of a random selection of sites along the highway.

In Ocean Springs all tourist commercial establishments, except Edwards House, the beach hotel, are on Porter Street between the bridge and Washington Street. The three tourist courts are very small part-time businesses that depend heavily upon overnight trade. Two good restaurants and three service stations

are also located in this segment of U. S. 90 along which there is much idle land that would soon be pressed into use if the resort business warranted an expansion. On the north side of the highway near the bridge the town maintains a free trailer camp that appears to be unused a large part of the time.

With seven of the eleven hotels in the Biloxi Section, over half of the tourist courts, practically all of the lesser inns, and the more than two score tourist homes, it is evident that Biloxi has a commercial-residential capacity far in excess of normal requirements for commercial travelers or transient tourists. Therefore, it is the most important commercial resort along the Sound. As was suggested in Chapter III, in very large measure the resort function in Biloxi is based upon its quaint and picturesque qualities no less than upon the fact that it is an old town with several places of historical interest. The parallel pattern of narrow streets, the fishing fleet, old homes, churches, lighthouse, and cemetery are features that have long attracted vacationists from all parts of the South and Middle West. It may be argued that Bay St. Louis and Pass Christian possess similar distinctive qualities, and they do in lesser degree, but being primarily residential resorts, they have seldom attempted to capitalize upon them to the same extent that Biloxi has promoted its resort potentialities. Biloxi's active Chamber of Commerce constantly advertises the town as the ideal summer and winter vacation spot along the Sound. Furthermore, Biloxi has been a commercial resort for many decades and has acquired a wide reputation as a place of interest, whereas Bay St. Louis and Pass Christian are little known to people outside of Mississippi and Louisiana. Thus the fact that Biloxi possesses a disproportionately large and varied assortment of tourist facilities is due to a widespread reputation and promotional efforts as much as it is to its age and picturesque qualities.

Land in Residential Use

Broad Pattern of Residential Land Use

Except for the space occupied by commercial, industrial, and communal purposes, the distribution of land in residential use is essentially the same as the pattern of the built-up areas, which, as was mentioned at the beginning of the chapter, may be

divided into three parts, namely, (1) the "rurban" zone at the west, (2) the main body of Biloxi, and (3) Ocean Springs. The pattern of residential land in each of these parts is different. In the west it is virtually all along the beach; in central and eastern Biloxi the pattern extends across the peninsula from Sound to Bay shores with large vacant areas where the land is low and unfit for occupance. In Ocean Springs the center of town is well built-up and the edges on all sides including the Sound margin are used only to a limited degree (Table 9). The extent and distribution of high, medium, and low grade housing also varies in each of the parts of the Section. These variations will be elaborated in the following discussion of the five classes of residences recognized in the towns along the Sound.

Distribution of Classes of Residential Land

Class I.--Superior dwellings of this type, as elsewhere along the coast, are limited to properties facing the Sound. None is located on the bay shore, and along the Sound the distribution is very uneven. Most houses of this type are in Biloxi; none are found in Ocean Springs; and they are not common in the inter-urban zone (Table 10). In Biloxi the majority are in the west end of town where, between Porter Avenue and the city limit, they occupy 29.1 per cent¹ of all the frontage. They also are predominant in the blocks between Porter and Seal Avenues. On East Beach Avenue, between the commercial beach and the seafood packing district, they occupy about a third of the frontage. These two sections are the best residential districts in the city. Both are close to the center of town, and, except for the New Biloxi and White House hotels at the west and the Tivoli Hotel and Island View Court in the east, both are purely residential with little commercialization. It is noteworthy that on West Beach Avenue the best dwellings are close to, but do not join, the beach tourist-commercial section in the center of town, whereas the residences at the far west end of the city are of lower grade. This is the same phenomenon that was noted in regard to the distribution of high class dwellings in Pass Christian (Chapter II). The extreme west end of Biloxi is too far removed from the center of town and from schools to be the most ideal residential area. As a matter of fact, in density and

¹Computed from MS maps.

quality of residences, all land on the shore west of the Seashore Camp Grounds, is more like the inter-urban zone beyond the corporate limits than it is like the section from the camp grounds east to Seal Avenue. This condition prevails despite the fact that the physical qualities of all of West Beach are uniformly good for all blocks.

That only five per cent of all the frontage, or about a sixth of all land in residential use in the inter-urban zone is Class I is not due to any site quality, but rather to the inability of the community to support a larger high caliber residential district. The same condition holds for Ocean Springs which has a few good dwellings along the beach but none of superior quality.

Class II.---Class II residences, which, it will be remembered, are smaller than Class I but definitely of better quality and better repaired than Class III, are very widely distributed, and appear to be more numerous in this section than they are in the Gulfport Section. As would be expected they occupy a majority of the beach property not in Class I. Over half of all residences in the inter-urban zone are Class II as are over half the residences between Porter Avenue and the western corporate limit in Biloxi. They are also predominant on East Beach and along the Sound in Ocean Springs. Although they are not so numerous as Class III types, such dwellings are also relatively common in the densely built-up residential area that lies between the main retail section of Biloxi and the commercial water front. The largest area of dwellings in this category is located west of the retail section north and south of the railroad. The portion north of the tracks on Seal Street is relatively new. It is similar to the Broadmoor subdivision in Gulfport in that it is on cheap land relatively close to the center of town, and, therefore, has become a more popular place to build than places on the beach in the west end of town. Houses throughout the Section are predominantly of wood, but in this area many of the new structures are stucco or asphalt shingle dwellings.

The sparsely settled subdivision at the north end of Porter Avenue, and Oak Park subdivision, farther northwest overlooking Back Bay, are also recent developments dating since 1925. Both are good residential sites and the few dwellings that have been erected are well above average quality. Failure of these subdivisions to grow rapidly may be attributed to remoteness and

to the relatively light demand that has prevailed in Biloxi since the real estate boom, under which they originated, collapsed in 1926. Both are therefore good examples of premature subdivision.

Class III.—Class III residences are relatively uncommon in the inter-urban zone, although they are more numerous than is indicated on Figure 6 which is a generalized picture. By and large the beach land in the inter-urban zone has a high value, hence the residences tend to be above average quality and only about one dwelling in every four is a Class III type. Most of the dwellings indicated on Pass Road are farm residences of average or below average caliber.

In Biloxi Class III dwellings are common to all parts of town except the beach. They are predominant on both sides of East Howard Avenue from Main Street to Oak Street. The residences south of the main retail section are primarily of this type. North of the railroad in the central part of town the quality of dwelling units tends to vary by streets as well as by blocks. Only La-meuse Street, however, is everywhere bordered by Class III dwellings. The other streets, such as Reynoir, for example, is Class III on one side and Class IV on the other. Main street, on the other hand, is bordered by Class V dwellings near the railroad and by Class III and IV dwellings toward the northern end. Thus the whole pattern of residences in this part of the city presents a motley picture the arrangement of which appears to be based entirely upon precedence and the tendency of dwellings of similar quality to be located together.

In 1940, three large parcels of land in Biloxi were added to the area in Class III residences through construction of housing projects by the United States Housing Authority. These projects are the Bay View Homes and the East End Homes for whites and the Bayou Auguste Homes for Negroes (Fig. 6). Each parcel contains 17 two story brick buildings with six apartments per building, and has a maximum capacity of 472 persons.¹

Selection of sites for the projects was dictated largely on the basis of the maximum number of substandard or dangerous dwellings that could be eliminated without interfering with good dwellings or with commercial establishments. Drainage was also

¹Mr. H. L. Schwan, Executive Director, Biloxi Housing Authority.

considered and is the main reason for not locating a project near the East Beach seafood packing district. Fourteen substandard houses were demolished to make room for the Bay View site, 22 at Bayou Auguste and 25 at the East End site. These sites do not satisfy the "equivalent elimination" stipulation of the Housing Authority contract, but under the agreement the city will destroy an equal number of houses in other blighted areas once the projects are ready for occupancy. Thus the area shown as Class V on Figure 6 will be eventually reduced; although on account of the high population density in slum neighborhoods, the area of eliminated houses probably will not be equal to the area occupied by the housing projects.

The majority of houses in central and western Ocean Springs are Class III types. Those on the bay shore north of the railroad are summer homes. As was pointed out at the beginning of the chapter, most beach properties in Ocean Springs are unimproved. Between the highway bridge and the southwestern corner of town, 70 per cent of the shore property is unused (Tables 9 and 10). As is apparent from Figure 7 this condition is partly a result of the bayous which are rather deeply incised. To a degree it is also a result of the fact that the shore parcels, most of which are relatively large, have been held for speculative purposes. Consequently they are much too expensive for the average local citizen or for outsiders seeking summer home sites. Moreover, surface irregularity in the shore zone has discouraged street development, which in turn, has hindered subdivision of some of the land into small parcels.

Class IV.---Residences in this category are most numerous in Biloxi north of the railroad and in the East End seafood workers neighborhood south of the railroad. North of the railroad in the central part of town the largest block of homes of this type lies between Reynoir and Cuevas Streets (first street east of Caillavet Street). Included in category IV are two sets of row houses or "camps," as they are called, owned by seafood canning companies and rented to plant workers. One set, owned by Southern Shell Fish Company, is located southwest of the intersection of Main and Bay View Streets across from the cannery; the other is on the made-land at the southwestern corner of the city. These camps along with others originated, as was suggested earlier in the chapter, prior to 1925, when the seafood companies

imported labor from Baltimore. They were designed for temporary quarters, and, although the two camps in question are in fairly good repair as compared to others, they are still far from adequate and do not have toilets, baths, or running water. A fairly high percentage of Class IV dwellings in the north central part of town are substandard in these respects.¹

Class V.—In Biloxi Class V dwelling units are concentrated in the central part of the built-up area north and east of the business district. Two smaller groups of very poor houses are located in the East End (Fig. 6). Most of the dwellings in the central part of town are occupied by Negroes; those in the East End and the few in the northeastern part of town are occupied by whites. The coincidence between distribution of Class V dwellings and the Negro residential district is not very high as Negroes also occupy a majority of all Class IV dwellings in the area north of the railroad between Bohn Street on the west, Division Street on the north, and Laneuse Street on the east. Furthermore, the group of Class IV dwellings located between the railroad and East Howard Avenue, east of the business district, are also almost all Negro residences. The total area occupied by Negro residences is 90 acres or 2.4 per cent of all land in the city, as compared to 1,210 acres or 32.5 per cent occupied by white residences (Table 7). Thus the patterns of Negro residences in Biloxi and Gulfport exhibit two outstanding differences. In the first place, Negro residences in Biloxi are not segregated from white residential areas as they are in Gulfport (Fig. 5). Secondly, perhaps a quarter of all Negro dwellings in Biloxi are located south of the railroad, whereas in Gulfport they are all located north of the railroad. These differences appear to be due entirely to the fact that in Gulfport racial segregation was an element considered in planning the town. Biloxi, on the other hand, is a very old and cosmopolitan settlement that has grown up

¹In the preliminary survey of housing made by the Biloxi Housing Authority in 1938 prior to locating the housing projects in which the most highly congested areas (i.e., Classes IV and V) were checked, it was determined that 58 per cent of white and 94 per cent of Negro dwellings did not have running water; 82 and 97 per cent, respectively, were minus indoor toilets; and 82 and 98 per cent, respectively, were without bath tubs. Biloxi Housing Authority, First Annual Report, 1940 (Biloxi; Biloxi Housing Authority, 1941), pp. 8, 11.

without much planning and a general absence of strong feeling in regard to race segregation. Location of some Negro dwellings south of the railroad may possibly be due to the fact that the railroad, built long after the town was started, was superimposed upon an already established residential pattern, and is, therefore, much less of a line of demarcation between good and poor residential areas than it is in Gulfport. The main line of demarcation in Biloxi appears to be Howard Avenue which was in existence long before the railroad was built. There are no Negro dwellings south of Howard Avenue.

The small parcels of Class V residences on East Howard Avenue and East Beach Avenue in the East End are camps for seafood workers. The parcel facing on U. S. 90 contains 10 dilapidated frame "shotgun" houses that were brought from Moss Point where they were originally built as part of a housing project for shipyard employees during World War I. They are referred to locally as "The Ten Commandments." The area occupied by both of these groups of unsightly shacks were strongly considered as sites for one of the housing projects, but the East Beach area was judged to be too low-lying and the East Howard area had too many reasonably good dwellings to make it a practicable location.

In Ocean Springs the low grade residences are largely west of Washington Street or on the back side of town. Class V dwellings are concentrated in the narrow zone that lies between Government Street and the railroad and are all inhabited by Negroes.

Land in Communal Use

Land used for communal purposes--governmental, institutional, and recreational--occupies more space in the Biloxi Section than in any of the other three urban Sections along the Sound. The bulk of this space, as may be seen in Figure 6, is in the western part of Biloxi and adjoining inter-urban zone and includes golf courses, the Naval Reserve Park, National Soldiers Home, and the Jefferson Davis Memorial. Use of land for other purposes of a governmental and institutional nature for the benefit of local population is not disproportionately large for the size of the communities.

Land Used for Governmental Purposes

Relatively little land is used for local governmental purposes in Biloxi and the individual parcels are small (Figs. 6 and 12). The city hall, at the corner of Main Street and Howard Avenue, houses most of the city government offices including the police station. The post office occupies the ground floor of the handsome, three story Federal Building located on the corner of Laneuse and West Jackson Streets (Fig. 12). Four fire stations are so distributed that about 95 per cent of the population are within a mile of a station. The central station is adjacent to the city hall; another is on East Howard Avenue at the corner of the property included in East End Homes; the third is at the south end of the parcel owned by the Back Bay community house; and the fourth is near the intersection of West Howard and Porter Avenues.

Biloxi, like Gulfport, has a large surface reservoir situated north of the city hall, into which water from free-flowing artesian wells flows before it is pumped into the city water mains. Ocean Springs also procures water from free-flowing wells, but it does not have a storage reservoir.

Neither does Ocean Springs have a city hall. Some of the city governmental functions have office space in the community house on Government Street and other branches of the city administration are located in part of a retail establishment on Washington Street.

The major part of two city blocks at the southeastern tip of Biloxi is used by the United States Coast Guard Air Station. From this headquarters amphibious aircraft patrol the coastal waters between New Orleans and Mobile. While Biloxi is centrally located within the zone of patrol, the main reason for choosing this site, which was opened in the early 1930's, was the quiet body of water off the peninsula in the lee of Deer Island. Lake Ponchartrain is too rough in heavy weather for safe landings, and Back Bay and all other relatively sheltered water bodies along the Sound are much too narrow to admit safe landings and take-offs at all points of the compass.¹

¹Interview with Station Commandant.

Land Used for Institutions

Land utilized by organizations of an institutional nature bulks large in the Biloxi Section primarily on account of the 700 acres occupied by the National Soldiers Home. This institution, like the Veterans Hospital in Gulfport, is operated by the federal government and is, therefore, a place of extra-local significance, and one that has no immediate functional association with the local community. Opened in 1933, the Home actually uses a minor part of the tract which is all heavily forested with a mature stand of live oak, magnolia and pine species. The buildings include a five story administration and hospital building, located near the entrance to the grounds on Pass Christian Road, and several lesser structures, including barracks, staff residences, recreation hall, and supply building, most of which are situated on the bay shore farther north. With a planned capacity of 4,000 the institution is a potentially important source of income for commercial firms in Biloxi. Prior to 1933 all of the land in the parcel was idle, although a part of it had been in the Naval Reserve previous to 1906. Transformation of the tract into a soldier's home is, therefore, not only a new use of the land, but perhaps the best possible use that could be made of a place endowed with such great natural beauty, but which, because of its remote location, has little value for commercial-recreational purposes.

In Biloxi several widely dispersed parcels of land, large and small, are used for schools. Seven are occupied by schools in the public school system; five are parochial schools and one is a private educational institution. The largest parcel, which is devoted to the city high school and adjoining athletic field, is on the north side of East Howard Avenue, east of the business district (Fig. 6). The other five large school grounds are used by public grade schools. Two are located on Howard Avenue east of the high school; one is on West Howard Avenue; Back Bay neighborhood children attend the school on Lameuse Street; and the fifth is located near the south end of Main Street. The public school for Negroes is on Main Street just south of Division Street in the largest Negro residential area. The parochial schools, which are smaller and occupy less land, are distributed in a pattern that is similar to the pattern of public schools.

Two are north of Division Street, one is in the business district, and two are in the seafood worker's neighborhood at the East End. The private school, located on Porter Avenue, specializes in aeronautical training. All parts of town are thus well served by schools except the area west of Porter Avenue, which, as has been mentioned, is somewhat of a hindrance to development of subdivisions in that part of town.

Ocean Springs has a large public high school near the western edge of town, and a parochial school south of the retail district. One small country grade school is located in the inter-urban zone at the corner of De Buys Street and the Pass Road.

In Biloxi churches are also numerous and widely scattered in the eastern half of the corporate area. Besides the Catholic churches that operate the parochial schools, Negro churches, and those of Protestant denomination, the Methodist Episcopal Church South maintains two churches and community houses as missions dedicated to serve families engaged in the fishing industry. One is located in the East End, and the other on Back Bay.

The Protestant, Catholic and Negro residents of Ocean Springs support six churches (Fig. 7).

Four parcels of land in the Section are used for cemeteries. The original cemetery in Biloxi covers a large plot split in half by the railroad right-of-way in the western part of town. Because part of it is so old that the inscriptions on the headstones are no longer legible and because of the unique custom occasionally still practiced of shading the graves with canopies of Spanish moss, this cemetery is a place of considerable interest to tourists. The new cemetery--Southern Memorial Park--is a beautifully landscaped 15-acre tract facing the Sound at Beauvoir, a mile and a half west of the corporate limits. This is the only example anywhere along the Sound in which relatively expensive shore property is used as a burial ground. Ocean Springs has one cemetery that occupies about a quarter of a city block near the center of town, and an older one atop an isolated spur overlooking Old Fort Bayou near the northern edge of the corporate area.

The Biloxi city hospital and only one in the Section is located on the beach near the foot of Main Street, and the public library is situated at the corner of Lameuse and West Water Streets (Fig. 6).

Land Used for Recreation

Aside from climate, scenery, beaches and points of historical interest, the attraction stressed most strongly in tourist literature advertising the Mississippi coast are facilities for golf. Four of the five¹ 18-hole courses along the Sound are in the Biloxi Section. One of them was developed primarily to satisfy the local market; the others were aiming at the tourist market and are, therefore, basically tourist-commercial enterprises.

The Great Southern golf course and country club was built in 1906 by the Great Southern Hotel in Gulfport, and is one of the oldest in Mississippi. Being only four miles from Gulfport it is heavily used by residents of that community as well as by hotel guests and other tourists. The course operated by the Edgewater Gulf Hotel, a mile and a half farther east, was built mainly for use by tourists and is the main support for the hotel. Biloxi's golf and country club, on Pass Road in the northwestern part of the city, although designed principally for local use, is also popular with tourists who frequent local hotels. The course at Gulf Hills and perhaps the best one of the four from point of design, is used primarily by tourists. Accessibility to local and to tourist markets is clearly the fundamental reason for concentration of golf facilities in this Section, while location within the Section appears to have been dictated in large measure by terrain characteristics. The heavily wooded, undulating to rolling surface at Gulf Hills is without doubt the best golf course site along the Sound margin, and the furrowed nature of the incipient dune ridge terrain in the vicinity of Great Southern and Edgewater Gulf makes that area second only to Gulf Hills from point of physical attributes.

On Pass Christian Road north of Beauvoir an idle dog race track illustrates two unsuccessful attempts in the last 15 years to promote a commercial-recreational activity of a far less conservative nature than golf courses. That they have been unsuccessful indicates clearly that the Gulf coast is too remote from a large population center for such a relatively rare type of enterprise, and that the local population--even in summer--is in-

¹The fifth is Pine Hills course on the north side of St. Louis Bay (Chapter II).

sufficient to support such an endeavor--moral scruples of the inhabitants notwithstanding.

At Beauvoir, the home of Jefferson Davis, first president of the Confederacy, is maintained by funds provided by the state legislature as a memorial park. The park, which is one of the show places along the Sound visited annually by hundreds of tourists, occupies only the eastern half of the parcel designated on Figure 6. The western half was formerly a home for Confederate veterans. In 1939 the home was closed and the buildings largely dismantled. The land is now unused.

The largest municipal park in the Section is the Naval Reserve Park at the northwestern corner of Biloxi adjacent to the National Soldiers Home. Until 1906 this tract and part of the land used by the Soldiers Home was owned by the federal government in order to preserve the stand of live oaks which were a valuable source of timbers used in construction of wooden vessels. Since 1906 Biloxi has held title to the land and a small part of the northeastern corner has been developed as a park with picnic and playgrounds, bathing beach and pier. The balance and larger part of the tract is idle.

The largest parcel of land facing the Sound in Biloxi that is devoted to recreational, as well as religious and residential purposes, is the Seashore Camp Grounds on West Beach Avenue about two miles from the center of town. This 1,400-foot property, owned jointly by the Louisiana, Mississippi and Alabama conferences of the Methodist Episcopal Church South, has been used as a summer retreat for Methodist and other Protestant groups ever since 1871. The property contains a tabernacle with capacity of 1,100 dormitories, dining-hall, water and light plant (independent of city system), and about 35 privately owned homes on the forepart of the grounds. Roughly a third of these homes are occupied the year around; the others are summer houses.¹ This is the only large collection of summer cottages in the Biloxi Section. From a functional viewpoint, however, they are not comparable to the summer houses in the Bay St. Louis-Pass Christian Section, as the residential function in this case is incidental to the religious motive, and the houses in all probability would not be present if it were not for the church organization. The camp ground is the same type of establishment as the small

¹Information from Mrs. Bishop, Manager.

summer camps located on the beach in Bay St. Louis (Chapter II).

Surrounded as it is on three sides by water bodies that are all more or less public and provide amply for such amusements as fishing, swimming and boating, there is little need for parks within the built-up pattern of Biloxi and only two exist. A large play park is located in the East End and a small formal park is situated near the railroad station (Fig. 12).

Public places of recreation in Ocean Springs include two tracts, one near the center of the residential area, which is unimproved and used as a playground, and another larger heavily wooded, 20-acre plot on U. S. 90 near the western margin of town. The northern end of the latter has been equipped as a picnic ground, but none of the space is intensively used. Recently the County dredged a channel and built a small boat dock in the bayou near the southwestern corner of the city. From the number of small craft anchored in the basin, it is clear that boating overshadows all other forms of sport in this as well as the other communities along the Sound.

Other places for recreation and social life are more numerous in Biloxi than in Gulfport partially because of differences in population composition and partly because the seafood canning districts are distinct, if not altogether separate, neighborhoods. Thus, as we have already seen, church-supported community houses are maintained in the East End and Back Bay districts for the benefit of seafood workers and their families. The city community house on the beach near the south end of Main Street serves the rest of the population and the winter and summer vacationists. The East End also has the hall of the Fleur-de-lis Society which serves as a social and political gathering place for the French-speaking population, and the Slavonian Hall which functions as a community center for the Yugoslav and Austrian nativity groups. The fishermen also use Pizatti Pavilion on Fayard Street south of the railroad station for dances. A large lodge for Negroes is located on Main Street north of the railroad, and on Lameuse Street, across from the post office, the Elks have erected a club house that is surpassed only by the Federal Building in size and elegance of design. The army camp near the cemetery west of Porter Avenue was recently set up as a temporary billet for servicemen on pass from Camp Shelby, near Hattiesburg.

CHAPTER V

LAND USE IN THE MOSS POINT-PASCAGOULA SECTION

The Moss Point-Pascagoula Section is, as we have seen, a dual urban community of about 10,000 inhabitants located at the east side of the Pascagoula River between its confluence with Escatawpa River and Mississippi Sound (Fig. 1). In both towns since long before they became incorporated and economies have been based upon industry. It will be remembered that because of the riverain sites and industrial character the manner and pattern of land use bears little similarity to the manner and pattern of land use in the other urban sections along the Sound.

Broad Pattern of Land Use

Distribution of land in urban uses in the 14 square miles enclosed within the incorporated and adjoining built-up areas, displays a broken pattern consisting essentially of knots of built-up land linked together by alignments strung along the main connecting roadways (Fig. 8). The disrupted aspect of the pattern stems basically from the dissected nature of the river banks. In lesser degree it is also a resultant of the sequence of settlement in which different parts of the towns have developed in response to particular localizing factors.

The largest body of built-up land in the rectangular pattern of Pascagoula surrounds the railroad station and adjoining commercial district. The railroad yards and shopping center together comprise the functional hub of the community and the nucleus to which residences are attracted. South of the central business district the pattern shows a close correlation to the drainage system. Three bayous preclude continuous development and used land near the river is confined to the inter-bayou surfaces. At the southern edge of the city the alignment of dwellings facing the beach marks the settlement of South Pascagoula, the first community and resort center in this part of the Sound margin.

In Moss Point, the main body of built-up land is also lo-

calized around the shopping center. West of the shopping center and Rhodes Bayou, a loosely woven cluster of residences marks the effective western end of the urbanized pattern. East of the main built-up area a broad depression segregates the central part of town from another built-up area, known locally as East Moss Point (vicinity of name "Elder Ferry Road" on Figure 8). At the east end of town the village of Kreole is located outside of the corporate limit between the Southern Kraft paper mill and the Louisville and Nashville station. Between the central part of Moss Point and Pascagoula the pattern of built-up land consists of widely spaced small groups of occupance forms aligned along the main north-south roadways and a few cross streets. This area, most of which is south of the Moss Point corporate limit, is sometimes referred to as "Eastside." Except for the Kreole neighborhood, which is posterior to the paper mill, each of these ill-defined clusters of occupance forms originated during the heyday of lumbering when sawmills were widely scattered along the river fronts, and housing facilities were distributed so as to be convenient to places of employment. Although most of the mills have long been closed down, the atypical settlement pattern remains.

Street patterns upon which the occupance units are laid out exhibit great irregularity and close adjustment to the physical qualities of the site. The majority of the street pattern of Pascagoula is essentially rectangular--a natural result of the fact that the river or western side of town lies at right angles to the Sound or southern side of the town. However, near the Louisville and Nashville rail line streets are parallel and perpendicular to the right-of-way which crosses town at an azimuth of about 100 degrees. In the southwest quadrant of the city some streets are aligned to avoid the bayous. At the south end of town the few east-west streets are adjusted to the slight curve of the shore and the north-south streets follow the parallel pattern that characterizes parts of older towns along the Sound (Chapter II). At the north end of town the streets, although irregularly spaced, are oriented on north-south and east-west lines.

Moss Point's street pattern is even more varied. In the eastern half of town (East Moss Point and Kreole), the irregularly spaced streets are oriented with the county survey lines. Near the center of town a portion of the street pattern conforms to

the azimuth of the Rhodes tract, an early land grant that extended inland perpendicularly from the Escatawpa River across the peninsula to the banks of the Pascagoula flood plain. The rectangular street pattern of which McInnis and Welch Streets are part, indicates the outline of the northeast end of that grant. Elsewhere in the central and western parts of town streets are widely spaced, laid out at various angles, and, in general, do not appear to have been arranged in accordance with a predetermined plan, except to avoid bayous.

The most striking feature of the pattern of used land is not the amount that is used, but the great spaces that are unused—a characteristic trait of all towns along the Sound. This nonurban land is not all idle. In western Moss Point, along Griffin Road, much of it is in crop, pasture or pecan orchards. Along the flanks of the larger bayous, and the rivers the unused surface is in timber, while at the inland margin of the communities the nonurban surface is primarily open grassland.

Land in Industrial Use

Land in industrial use embraces factories and associated grounds, and the transportation system. Land in transportation use includes, besides highways and streets, the railroads, waterways and airport. Although the railroad property and the airport clearly occupy as much land as combined area devoted to factories, they offer almost nothing in nature of direct support to the urban economies; hence, in considering land in industrial use the emphasis is placed upon manufacturing enterprises.

Manufacturing

Manufacturing in the Moss Point-Pascagoula Section is, as we have seen, dominated by three large plants each producing a distinctly different type of product. Ingalls Shipbuilding Corporation is a large, modern shipyard producing cargo vessels. Southern Kraft Paper Mill produces various grades of wrapping paper, and Jackson County Woolen Mills produces woolen outwear garments. These three plants employ collectively about 2,400 workmen¹ and are among the most conspicuous occupance forms along the

¹Based upon rough estimates of number of employees in the latter part of 1940.

Mississippi coast. Their operation dominates almost all phases of life in the two communities.

In addition to the large plants there are several small factories including four boatbuilding and repair establishments, three sawmills, two duck decoy manufacturers, a wood plug factory, veneer plant, plywood factory, and a fish products company. The sawmills and wood plug concerns are in Moss Point; the others, in Pascagoula. All of the plants except the shipyard and textile factory are based in the community so as to utilize local raw materials. The shipbuilding concern capitalizes upon a superior site, and the textile mill is attracted primarily by the labor supply.

Distribution of factories within the urban pattern is, with exception of the textile mill, confined to the water front, for not only do the majority of the companies use local raw materials, but they all depend in greater or lesser degree upon water transportation either in receiving raw stuffs or in exporting finished products (Fig. 8). Localization of factories along the rivers does not constitute an industrial district. The plants are widely spaced and of the estimated ten miles of river front, perhaps less than 15 per cent is in industrial use. With one exception,¹ all of the sites are at places where the main channels of the streams or their major distributaries lie close to the mainland. Along the west side of Moss Point, for example, the main channel of the Pascagoula River is about a mile off the mainland and the bayous (Dennis and McInnis) are tangent with the upland surface for but a short distance. All of this three miles of water front is, therefore, nonindustrial. Elsewhere points of tangency between channels and solid terrain are numerous, but most of them are unused by industry and some of them are idle. Thus with such a wide choice of suitable sites along the water front there has been little reason for sharp localization of factories and they are distributed in a random pattern.

Ship- and boatyards.--Ingalls shipyard, which occupies a 60-acre tract along the river below the bridges in southwestern Pascagoula, was opened in March, 1939. After constructing several large steel barges, the firm began work on a contract for eight

¹The McIntosh Lumber Mill is located on marshland facing McInnis Lake about a quarter of a mile from the upland.

all-welded steel C-3 type cargo vessels of 9,000 ton rating for the U. S. Maritime Commission. The first of these vessels was launched in June, 1940. The plant, which is an assembly yard utilizing parts prefabricated at the Ingalls Iron Works in Birmingham, was being expanded from four to eight ways, and employed about 1,100. All prefabricated sections and other fittings are brought to the yard by rail or truck from Birmingham and Mobile.

Although Ingalls is a new concern in Pascagoula, shipbuilding is not new to the community. During World War I four shipyards—one in Pascagoula and three in Moss Point—produced vessels of from 3,000 to 6,000 ton ratings. The largest of these firms, International Shipbuilding Company, used the site now occupied by Ingalls. The others were situated on the banks of the Escatawpa in Moss Point west of the business district. Most of the vessels were built of wood, and the community with its sawmills and vast supplies of lumber was an excellent site for economical production. Three 6,000-ton all-steel cargo vessels were built by International for the Italian government before the plant finally closed in 1921. From that date until Ingalls moved in there were no shipbuilding activities in the Section and the Ingalls site was largely unused.¹

Prior to 1939, Ingalls shipyard was located at Chickasaw, Alabama, on the Mobile River a few miles north of Mobile. Reasons for leaving Chickasaw are obscure. In view of the location of the prefabricating plant at Birmingham and possibility of using cheap water transportation, the former location would appear to be the more economical. It is alleged that Ingalls was forced to move because of labor difficulties and inability to get additional space for plant expansion.² Regardless of the specific reason or reasons for the transfer, it is clear that in moving to Pascagoula, the company acquired a proven site with ample room for expansion. In view of the eminence of war in Europe and possible critical shipping shortage, the desirability of increased plant space so that production could be pushed forward with max-

¹For few years prior to 1939, Pineland Bag Company manufactured paper bags from paper made at Southern Kraft in a plant on the shipyard site.

²The owner of the site at Chickasaw is reported to have refused to renew the lease.

imum speed, doubtlessly was a far more important localizing factor than either labor supply or cost of procuring raw materials. To a degree, then, the move to Pascagoula was made under abnormal conditions in which the common factors of localization were unbalanced by a need for rapid production.

For a time Ingalls considered moving from Chickasaw to Pensacola, but when the Pascagoula site was offered at a nominal sum plus the added allurements of tax reductions granted under the Industrial Act of 1936 (see Chapter III), the Mississippi location was selected.

A further minor advantage to location in Pascagoula is the fact that, as the only large shipyard and representative of heavy industry, the company is free of competition with other similar plants for labor. Moreover, because of its immense contribution toward urban support, the company has a relatively free hand in community affairs and plans for expansion. This latter point was seen taking shape in early 1941 in form of plans for a large company recreation center located on the beach in the south-east end of town.

Pascagoula was not a particularly good site from point of labor supply or housing. The 10,000 inhabitants of the greater urban area are scarcely enough to supply the unskilled labor requirements of a plant using 1,100 workmen. Most of the skilled labor transferred en masse from Alabama when the company moved. Additional unskilled labor is drawn from other towns along the Sound, and the company also runs busses to inland villages to augment the labor supply. Housing shortage was more of a hindrance than the labor conditions. Pascagoula was economically dormant from 1921 through the Depression and almost no new housing had been built. To circumvent this handicap, the Maritime Commission in late 1940 began a housing project containing 593 dwelling units, or enough to house about 3,000 people.

From the land use viewpoint the effects of the shipyard already have been considerable. Apart from placing 60 acres of idle land in active use, the housing project is major landscape transformation. Moreover, numerous other commercial establishments have sprung up in the general vicinity of the shipyard to provide shelter, food and other basic needs of the rapidly expanding population. These changes in the map of land use are small and little noticed as compared to the activity pattern.

The town is booming. All facilities are overcrowded.¹ Restaurants, stores, movie houses, filling stations and other establishments are doing flourishing business. The hum of activity presents a far different picture than that which obtained in the preceding two decades when the town was without a large industry to support its commercial establishments.

In addition to Ingalls, which currently dominates all economic activities in the city, four boatbuilding and repair firms occupy sites along the river in the northern part of the city. The largest of these establishments is the U. S. Government Dry Dock and Marine Repair Yards located on the west bank of the river between the bridges. This yard does all repair work on government craft for the Mobile District, which extends from the Pearl River, or western boundary of Mississippi, to Appalachicola, Florida. Thus it is located about at the midpoint for the district it services. Established in 1910, it now has two marine railways, one of which is capable of handling vessels up to 2,000 tons. Activity varies during the year, with up to 100 workmen employed during periods of maximum operation, and 75 employed regularly.

B. F. Walker and Sons Shipyard, located about two blocks north of the highway bridge has been in operation under various owners for 60 years. The company specializes in production of steel barges, tugs and other work boats. The output, which tends to fluctuate greatly, is sold to shipping and towing companies located at widely scattered points along the Gulf Coast from Florida to Texas. Employment varies from about 30 to 75 workmen depending upon the production schedule.

Poitevin Brothers boatyard is near the northwest corner of the city and Krebs plant is east of Krebs Lake at the north edge of town. Poitevin Brothers have been producing boats in Pascagoula since 1907 and have been located at the present site since 1916. Krebs has operated at its site for 40 years. Both of these companies are smaller than Walker and Sons, and they specialize in small pleasure boats and fishing smacks, although both have pro-

¹As of April 1, 1940, Pascagoula had the lowest "vacancy ratio" (percentage of dwelling units vacant, and for rent or sale) and the highest percentage of occupied dwelling units with more than 1.51 persons per room of the towns along the Sound (see Table 11).

duced steel barges. Neither plant operates continuously, and like Walker's firm, the boats are produced on contract with individuals from a wide area along the Gulf.

Localization of boatbuilding in Pascagoula stems from the period before the turn of the century when Pascagoula was the most important lumber exporting point on the Mississippi coast. During that period a heavy local demand existed for tugs and barges for use by lumber companies and the lightering companies that transported lumber from Moss Point to oceangoing vessels lying in Horn Island anchorage. Although that local market disappeared with the decline of the lumber industry, the boat companies and skilled workmen that met the demand have remained. Sites for boatbuilding are better than could be found at any of the other ports in Mississippi, and inasmuch as a boatyard does not need to be near its market which is, in this case not well concentrated, Pascagoula has retained the boatbuilding function. Furthermore, the community is a good source for the pine and cypress lumber, and is not far from suppliers of steel.

Paper mill.—Just as Ingalls shipyard now dominates the activity pattern in Pascagoula, Southern Kraft Corporation's paper mill has for more than 20 years tended to dominate Moss Point's economy. The mill employs about 800¹ persons the majority of whom reside in Kreole or Moss Point. It is located on an 80-acre tract that lies between U. S. 90 and the Escatawpa River at the east end of town and is served by spurs from the Louisville and Nashville and Mississippi Export railroads. On account of the malodorous nature of paper-making processes the site was selected so as to be as far removed from the residential part of town as possible and still be accessible to the river and the Louisville and Nashville right-of-way. The site is the eastern limit of navigation on the southernmost branch of the river and only upland area that abuts on the channel. Pure water, the second most important resource needed for paper-making, is readily procured in ample quantities from artesian wells. Daily output of the mill is 120 tons of bleached kraft paper which is used chiefly for wrappings and for manufacture of bags. It is marketed nationally.

¹Interviews with Mr. Moore, General Manager.

The present plant originated from an experimental paper mill built in 1910 by a local corporation headed by L. N. Dantzer,¹ owner of the largest lumber mill in Moss Point and of large tracts of timber and outover land in Jackson and adjoining counties. Interest in paper manufacturing arose primarily from the marked decline in lumber production in the area tributary to the Pascagoula River after 1900, and pressing need for an industry to supplant the sawmills. Further incentive was derived from the fact that an experimental pulp mill, which had been established a few years earlier in Orange, Texas, had succeeded in making pulp from southern pine logs.² The original Moss Point mill operated on an experimental basis for three years and in 1913 was rebuilt and the sulphite process of fiber separation installed. It operated as a local corporation until 1928 when it was purchased by Southern Kraft Corporation, a subsidiary of International Paper Company. It is the only paper pulp mill in Mississippi and one of four owned by Southern Kraft in southeastern United States.

At the outset and for the first ten years of operation sawmill waste collected from mill sites along the rivers formed the main source of raw materials. As the sawmills closed down it became necessary to contract for pulpwood and to acquire timber land so that a reliable supply of pulpwood could be assured. Pulpwood supplies are currently drawn from a wide area in southern Mississippi. Very little comes from Alabama as the southwestern part of that state is tributary to the two large mills in Mobile. Generally speaking the majority of the pulpwood is derived from sources located within a 50-mile radius, with 150 miles the extreme limit of the supply area. The large tributary area results partly from the policy of the mill to rely heavily upon supplies contracted for from lumber companies and farmers, and to use a minimum of stocks from paper mill holdings. Up to 1935 no pulp logs had been cut from the extensive company holdings in Jackson and neighboring counties. Since 1935 and with its reforestation program enabling a sustained yield, company holdings have supplied an increasingly large part of the raw material necessary to maintain full capacity output of paper rolls. Under this plan of op-

¹Moss Point Advertiser, Southern Kraft Edition, January, 1935.

²Ibid.

eration about half of the logs arrive at the mill by waterway and truck, and half by rail.

Woolen mill.--The third ranking manufacturing plant in terms of employment and space used is the Jackson County Woolen Mills, located in the inter-urban area midway between the two municipalities. It is a knitting mill operated by Peterzell Brothers whose yarn mill is located in Manchester, North Hampshire. The mill, which was opened in 1937, is one of about 300 outwear manufacturing plants in the United States¹ and specializes in production of swim suits and sweaters made from wool, cotton and rayon. Wool is imported from New Hampshire by water and railroad; cotton and rayon yarn is purchased from mills in southeastern United States. The finished products are made for, and marketed through, nationally known chain stores and mail-order houses, such as J. C. Penney's, Montgomery Ward and Pacific Woolen Mills. About a third of the factory building, which has 150,000 square feet of floor space, is used as a warehouse where finished goods are stored to await delivery to sales outlets. This arrangement is a convenience to both the sales companies and the factory as it enables prompt delivery and permits the factory to maintain a uniform production schedule.

Presence of this knitting mill, like the MacSmith garment factory in Gulfport, is due in part to the availability of supply of female labor, and to the tax benefits allowed under the Industrial Act of 1936 (Chapter III). To a large degree also it is a result of the superior financial condition of the county treasury. The county purchased the site and arranged a bond issue of about \$325,000 to pay for the factory. Ability of the county to handle such a financial endeavor, is due to the large income it derives annually from the toll bridge across the Pascagoula River.² It is doubtful if either or both of the municipalities could have undertaken such a project with any certainty of success.

The name of the mill and its location between Moss Point and Pascagoula indicates the part played by the county government

¹Information from Mr. E. A. Khayat, Personnel Manager.

²During 1940 the gross income from the toll bridge was reported as \$487,000. In late 1941 after much litigation the county was forced to sell the bridge to the State Highway department, which operates it without toll.

in procuring the industry. Both municipalities originally demanded the factory and its location represents an intelligent compromise. The site is (1) central with respect to the population pattern, (2) accessible to two main highways that connect the towns, and (3) adjacent to the Mississippi Export rail line.

The source of the labor supply also emphasizes the county-wide interest and stake in the mill. Of the 600 employees, 80 per cent of which are women, about 300 live in the vicinity of Pascagoula and Moss Point. About 100 commute by company-operated busses from the rural communities west of the river and the remainder from towns and villages in the eastern part of the county.

Until the knitting mill was placed midway between the two towns, there had been little reason for development of the unincorporated area, and consequent coalescence of the two urban patterns. However, after three years of operation, there is still not much evidence of residential development in the factory area comparable to Kreole or the residences near Ingalls. This lack of development, which in 1940 consisted of three retail firms and a few dwellings, is due chiefly to three factors: (1) most of the factory employees are women; (2) the highly mobile nature of the modern labor supply; and (3) the area is far from schools and the two commercial centers.

Sawmills.--One portable and two stationary sawmills occupy sites on the Escatawpa in Moss Point. The L. N. Dantzler Lumber Company mill is at the head of the promontory that forms the western bank of Beardslee Lake, and McIntosh's mill, which is somewhat smaller, is situated on the marshland and near McInnis Lake. The portable mill is located temporarily near the highway bridge that carries State route 63 across the Escatawpa. The stationary mills have a total capacity of about 45,000 board feet daily, but neither of them nor the portable mill operates on a full-time basis and their overall contribution to the community in terms of employment is relatively insignificant. As with most sawmills the actual operating space is quite small. Curing yards take up most of the space and even they do not use all the area shown on Figure 8 as belonging to the lumber companies.

This small sawmill business is the remnant of an industry that once made Moss Point one of the largest mill towns on the Gulf Coast. In the 1880's nine sawmills with a total daily capacity of 535 million board feet were located in the area now in-

corporated in Moss Point.¹ By 1900 the maximum capacity of all mills in the vicinity of Moss Point and Pascagoula was about 600 million board feet per day.² Piles of sawdust at various points along the river banks are all that remain to mark the location and indicate the extensiveness of the earlier sawmill operations.

That a sawmill industry should develop near the lower end of the Pascagoula River system which drains all or parts of 12 counties in the originally abundantly rich longleaf-slash pine forest complex of the coastal plain is readily understood. That the vicinity of Moss Point became the center of the industry was due to (1) the fact that it was at the junction of the main two streams in the river system and accessible to eastwest lines of communication along the coast, and (2) large bodies of quiet water along the lower end of the Escatawpa River flood plain provided ample space for timber booms. Pine logs and hewn timber were floated downstream during the spring and fall freshets in the Leaf, Chichasawhay, Escatawpa, and Pascagoula Rivers to receiving points near the river junction from whence they were towed by tugboats to the booms of the several mills. The vicinity of Moss Point was an ideal location for the sawmills because the lakes, such as Beardslee and McInnis, and lesser channels of the river provided safe and economical boom space for the sawmill and the lumber shipper.³ Absence of such storage space at the lower end of the Pascagoula River appears to be the main reason why there were no sawmills south of Krebs Lake (Fig. 8).

Moss Point's decline as a sawmill center set in as soon as timber extraction in the area tributary to the Pascagoula River system began to subside. Although there are no available statistics to bear out the contention, it seems clear that cutting began to decrease shortly after 1900. In 1906 a severe storm swept southeastern Mississippi destroying most of the sound timber on holdings of at least two Moss Point lumber companies forcing their mills to close down.⁴ As has already been mentioned in Chapter I, construction of the railroad between Mobile and Jackson drew off to Mobile much timber from the northern end of the Pascagoula drainage basin that otherwise might have been floated

¹Moss Point Advertiser, Southern Kraft Edition, January, 1935.

²Ibid.

³Ibid.

⁴Ibid.

downstream to Moss Point. In 1910 in order to open up new timber tracts and help sustain the sawmills, the Pascagoula Northern Railroad (now Mississippi Export Railroad) was built from Moss Point to Vinegar Bend, Mississippi along the crest of the inter-fluve between the Escatawpa and Pascagoula Rivers. Even this new territory was soon stripped of all merchantable species and by 1920 sawmilling was reduced to a minor role in the local economy.¹

That Moss Point did not become a "ghost town" as did so many towns whose sole function was lumbering, is due to (1) the timely shift to paper manufacturing, and (2) shipbuilding pursuits during World War I that temporarily rejuvenated the community. Despite these two activities, as was mentioned in Chapter I, the town lost population and in 1930 was actually 20 per cent smaller than it had been in 1910, the date that marks the approximate end of extensive lumber operations.

Strategic location at the downstream end of a large river system means much less nowadays to the sawmill business in Moss Point than it did in earlier decades, not only because there is less timber to cut in the tributary area, but also because of a widespread use of portable sawmills, and truck transportation. On the average, about half of the logs received at Dantzler's mill are brought in by truck; the other half by water.²

Other wood products plants.—Five factories in Moss Point and Pascagoula produce a varied assortment of wood products from hardwoods such as oak, ash, gum, and cypress species that abound on the bottomlands of the Pascagoula and its major tributaries. All of the companies have been introduced since the decline of sawmilling and their presence indicates the extent to which hardwood species have replaced pine as the chief remaining timber resource in the Pascagoula River basin.

Oldest and largest of these factories is Martin Veneer Company located at the southern end of McInnis Bayou in northeast Pascagoula. Starting as a shingle factory in 1910, it gradually shifted to production of veneers from gum, cypress, and a little

¹The Mississippi Export rail line has not hauled any logs since about 1920. Mr. W. M. Dutton, General Manager, Mississippi Export Railroad Co.

²Information from Mr. Barber, Manager, Dantzler Lumber Co.

ash and oak. All of the logs arrive at the plant by river from skidder camps on company-owned bottomlands in Jackson and George Counties. Next to the Dantzler Lumber Company, Martin Veneer is one of the largest private land owners in Jackson County and a total of about 1,000 men are on the payroll in all phases of company operations. About 200 of the employees work in the factory. Roughly half the veneer is utilized by W. G. Avery Plywood Company which is located on an adjoining property; some is used by local boatbuilders; and the remainder is shipped to widely scattered places in southeastern United States.

W. G. Avery Plywood Company, established in 1937, is another industry brought to this Section under the provisions of the Industrial Act of 1936. It is, as already mentioned, ancillary to the veneer company which supplies all the pop-ash, red bay, and gum veneers used to form plywood. The fifty workmen that are normally employed produce about a carload of plywood daily most of which is used by automobile body manufacturers. In addition to plywood about 5,000 pairs of wooden sandals, known as "goula" clogs, are turned out each month. The sandals are made from waste material unsuitable for manufacture of veneer.

From 1934 to 1940 Moss Point Manufacturing Company occupied a small site on the Escatawpa near Moss Point's commercial section. This company also utilized waste logs unsuited for veneer production to manufacture hardwood cores, or "plugs" as they are called, for paper rolls. The output of about 100,000 plugs daily was sold to the Moss Point, Mobile, and other Southern Kraft paper mills. In 1940 in order to have room for expansion and be near the source of logs, the company moved to a reconditioned sawmill site on the Pascagoula River several miles north of Moss Point.¹

For about twenty years manufacture of duck decoys has been a specialty of two factories in Pascagoula that has earned the town some recognition in the sporting goods world. Hudson Manufacturing Company and Politevin Brothers Company have taken advantage of an abundant supply of pop-ash, a light weight, buoyant hardwood, which grows in swamps, to develop businesses that supply a nation-wide market as well as demands of some foreign buyers. Only the butt ends of pop-ash logs, or portion submerged in water, is used as the wood has a particularly low specific gravity and is

¹Pascagoula Chronicle-Star, June 7, 1940.

readily milled. Most of the raw material, which is discarded by sawmills, is collected locally or trucked in from sawmills in Mobile.¹ Both decoy producers are small firms, each employing about fifteen men and women, and operating on production schedules that vary with demand. Neither plant uses much space. Poitevin Brothers, which was recently acquired by Animal Trap Company of America, has been operated in conjunction with the boatbuilding business and is located on the same site. Hudson Manufacturing Company is located at the northern end of the area occupied by the shipyard (Fig. 8).

Fishery products plant.---While much industrial use of land is based upon forest products, only one factory in this Section is currently utilizing fishery products. Quinn Fish Oil Company is located on a made site in the marshland of the Pascagoula River flood plain about a quarter of a mile northwest of the toll bridge. The factory, which produces crude fish oil and fish cake from menhaden, occupies less than five acres of land. It is the first of its type to be established on the Gulf Coast. To a degree the plant is an experimental one in that as yet there is no certainty of a continuous and adequate supply of menhaden within reasonable distance of Pascagoula. Besides the main building the plant facilities include oil storage tanks, living quarters for crews, and a yard for building and overhauling its specially built, diesel-powered boats. The isolated site is due entirely to the nuisance of a bad odor that emanates from the factory despite efforts of plant designers to eliminate it. Although isolated from the residential part of town, it is near the Louisville and Nashville station from which the end products are shipped. Location north of the highway and west of the toll bridge is not disadvantageous because (1) boats on the river have right-of-way at the bridge, and (2) free use of the toll bridge is guaranteed in the contract signed with the county administration under the Industrial Act of 1936. In fact, it was this contract which induced the company to locate in Pascagoula.² Despite employment of about 200 men on boats and in the factory, the net gain to the urban economy resulting from this establishment, which has been functioning for only two years, is relatively slight. Practically

¹Ibid.

²W. M. Quinn, Manager.

all workmen are imported from the eastern Florida communities where the two other Quinn factories are located, and the plant operates only about seven months out of the year. However, two new and possibly unexpected benefits have resulted: (1) Refuse poured from the plant into the river has greatly increased the number of fish that feed in the area and improved it as fishing grounds, and (2) poultry raisers along the coast have been able to save up to 25 per cent on feed costs by purchasing fish cake directly from the factory.¹

As mentioned in Chapter I, seafood packing has been upon occasion represented in all towns facing the Sound except Long Beach. Between 1923 and 1936 two larger canning plants operated in Pascagoula and are alleged to have employed about 1,000 persons during peak operation.² By 1940, however, both plants were closed. All that remains to recall the seemingly prosperous industry are the idle buildings of the Mexican Gulf Canning Company and Pascagoula Canning Company facing the bayou about a block north of the toll bridge. Failure of this industry to maintain its solvency is due to the same factors on a more accentuated scale that have been responsible for recurrent packing company failures in Biloxi (Chapter IV). Unreliable supply of raw materials, distance from major fisheries, inability to procure timely and adequate numbers of fishermen and packing plant workers, and low margin of profit coupled with the highly competitive nature of the business, all contributed to some extent toward failure of the industry.³

Another branch of the fishery industry is represented in Pascagoula by one small company engaged in catching and shipping fresh fish. The boats range as far as the Texas and Mexican Gulf coasts collecting variety of commercial species of which red snapper is most common. These are shipped to northern and eastern markets. Apparently for no other reason than momentum of an early start this small but long-standing business is an exclusive feature of Pascagoula's economy that is not represented in any other

¹Pascagoula Chronicle-Star, June 7, 1940.

²Moss Point Advertiser, Southern Kraft Edition, January, 1935.

³Mr. J. F. Velecich, former Manager, Mexican Gulf Canning Company.

coast community.

Other manufacturing.--The 10,000 inhabitants that constitute the local market in this section is not sufficient to warrant much manufacturing designed, purely to supply its demands. Two ice plants and a part-time mattress factory--all located in Pascagoula--are the only representatives of this category of industry.

Transportation

Railways.--The Moss Point-Pascagoula Section, as mentioned earlier, is served by two railroads--the Louisville and Nashville and the Mississippi Export. Either as supply lines or export lines, both have been basically instrumental in the industrial development that gradually has supplanted lumbering. Direct shipments to and from the Northeast and the West are possible via the Louisville and Nashville, and the Mississippi Export line provides a more direct link to the Middle West through its junction with the Gulf, Mobile and Northern railroad at Lucedale.

Although the Mississippi Export is a short (42 miles) freight line that makes only one round trip daily to Lucedale, it is a more important element in transportation land use than the Louisville and Nashville because (1) the company's main office and yards are in Moss Point, and (2) it serves both towns and the intervening unincorporated area (Fig. 8). A relatively small part of the area shown as company headquarters on Figure 8 is in active use. With not much equipment and but little need for freight yards, repair sheds and office space, the plot is not intensively used. An office and freight house are also maintained in Pascagoula at the end of the line on Pascagoula Street.

Even since the Mississippi Export Company was formed in 1923 to take over the bankrupt Pascagoula Northern line, which, as we have seen, was a logging line, its primary function has been to serve the paper mill by supplying pulpwood and exporting paper rolls. In 1935, for example, 79 per cent of the company's gross revenue was derived from those services.¹ The Woolen mill has added some business as has Ingalls, Avery Plywood and the fish oil plant. In late 1940 the company was speculating on the advisability of building a spur across the river to the site of the latter

¹Information from Mr. W. M. Dutton, General Manager.

factory.¹ As a result of the new industry, the business of the railroad has increased and become more varied so that only about 55 per cent of the cars hauled in the latter part of 1940 originated at or were destined for the paper mill.

Despite the fact that the headquarters of the railroad is in Moss Point, the significance of the line to the community must be judged in terms of service rendered and not in terms of its direct contribution to urban support. In 1940 only 28 persons, or 2.3 per cent of all gainfully employed, in Moss Point, worked for "railroads (including railroad repair shops) and railway express." These figures are both relatively and absolutely higher than they are for Pascagoula or most other towns along the Sound (lower than Gulfport and Bay St. Louis), but they are still too low to warrant assigning much importance to the Mississippi Export as a means of urban support.

Although the Louisville and Nashville line uses much less urban area than the Mississippi Export, the space is more intensively used in part because it is a mainline of a Class I railroad. Five passenger trains and several freight trains pass over the tracks daily. Moreover, the line hauls a majority of steel used by Ingalls and the lesser boatyards and a large part of the paper shipped by Southern Kraft. The area allocated to the freight and passenger station, as in Pass Christian and Bay St. Louis, is much larger than is required and most of all the space north of the tracks is parkway.

Waterways.--Moss Point and Pascagoula are industrial ports and practically all land used in conjunction with water transportation is incorporated with factories fronting upon navigable streams. Hence, all boatbuilders, sawmills, the paper mill, veneer factory, and fish products plants have ways, slips, marine railways, piers, or other dock facilities as suits their needs as part of their standard operating equipment. In theory the amount of land so used is limited by the extent of water frontage enclosed within industrial sites. In actual practice, however, the extent of industrial dock space is much smaller, as no industry needs to use all of its frontage for shipping or receiving facilities.

Practically all commodities in Pascagoula's water-borne

¹Ibid.

commerce are handled by the industrial ports. In 1939, 77 per cent of the commerce, which is all internal traffic, was made up of forest products with pulpwood the outstanding commodity.¹ The remainder consisted of about equal quantities of fuel oil and menhaden.

All traffic is moved by towed barges or fishing craft, consequently the 14-foot channel depth maintained on the Escatawpa River and Pascagoula River (upstream from the fish oil plant) is sufficient. Downstream from the fish oil plant to Ingalls the depth is 16 feet. From Ingalls to the mouth of the river and across the Sound to Horn Island Anchorage, the channel is dredged to 22 feet, or more than enough to accommodate cargo vessels launched from the shipyard.

With the great majority of all commerce passing through industrial terminals, little need exists for public port facilities such as would be required if either town were a general cargo port. Pascagoula's municipal wharf occupies 1,300 feet of frontage south of Delmas Street. Maintained under supervision of the city Port Commission, it is good repair and is used exclusively by the Coast Guard and occasionally by pleasure craft. Moss Point's municipal terminal consists of a short dock behind the commercial section that is largely unused except by pleasure boat owners.

One firm in Pascagoula specializes in water transportation. Colle Towing Company, whose office and wharf is located at the south side of the toll bridge, operates tugs to handle local traffic and provide towing service for intracoastal waterway shippers along the Gulf from Appalachicola as far west as Houston. This organization is the only one remaining of a number of such companies that once made Pascagoula their headquarters and provided lightering service for lumber exporters.

Airport.--Jackson County airport covers about 120 acres of flattish grassland between Telephone Road and the Louisville and Nashville right-of-way at northeast corner of Pascagoula (Fig. 8). Except as an emergency landing field it does not serve in the pattern of commercial air traffic along the Gulf. Aircraft of local flying enthusiasts are housed in a small hanger and the

¹Commercial Statistics, Mobile, Alabama District, op. cit.

field is used chiefly for recreational flying.

Land in Commercial Use

In 1940 Pascagoula had 92 retail outlets, seven wholesale firms, and a total per capita trade from retail, wholesale, and service establishments of \$338, as compared to 46 retail firms, no wholesaling, and a per capita trade of \$198 for Moss Point (Chapter I). As may be gathered from Tables 2 and 3 the importance of the trade function, whether judged by number of establishments or amount of business transacted, corresponds closely to the size of the towns, i.e., Pascagoula ranks third in population and in trade among the six coast towns and Moss Point ranks fifth in both. In general way also the same correspondence holds for the amount of land in commercial use (Figs. 3-8), especially if allowance is made for commercial tourist facilities, which occupy much space compared to the amount of business transacted. Neither town is a trade center and in both places commerce is relatively less significant from the employment angle than in other towns along the Sound (Table 2). The center of interest in both communities has always been industry and trade has developed only as has been required to meet local and rural demands.

Rural trade is not large and it is split between the towns with Moss Point serving farmers north of the Escatawpa and Pascagoula tending to serve the country-folk to the east and from the west side of the Pascagoula River. For many years the broad flood plain of the Pascagoula River has impaired Pascagoula's trade function by isolating it from the southwestern half of the county. Construction of U. S. 90 across the marshy expanse reduced the isolation, but operation of the toll bridge,¹ in the eyes of some local merchants, continued to represent a barrier that discouraged many potential shoppers on the west side of the river from making Pascagoula their trade center. In view of these conditions, it is not surprising that only 11.7 and 9.6 of the gainfully employed in Pascagoula and Moss Point, respectively, are engaged in retail activities. That Pascagoula has more commercial firms that handle a somewhat wider variety of goods is due to the fact that it is

¹By purchasing a book of tickets the toll is less than 25 cents per car. For single passage the charge is 50 cents per car.

twice the size of Moss Point. It is also due to the momentum of an early start and to the 70 years that it has been the seat of county administration and a station on the only first-class railroad in the county. Moss Point, on the other hand, started as a sawmill town and industrial satellite of Pascagoula and its commercial function developed for much the same reason that outlying shopping centers develop in large cities. As the community has grown under the stabilizing influence of the paper mill and of a small rural trade, the commercial functions have enlarged until it is possible to purchase almost as wide a variety of goods in Moss Point as it is in Pascagoula. Moss Point, for example, still depends upon Pascagoula for such goods as lumber (strange as it may seem), other building materials and jewelry, but otherwise the difference in size of the commercial function between the two towns is primarily a matter of number of outlets and not of variety of outlets.

Pascagoula

Retail and service establishments.--Land in commercial use in Pascagoula is, as was indicated earlier, concentrated in the vicinity of the railroad station (Fig. 8). Delmas Avenue, the first street south of the railroad, is lined on both sides for about two blocks with retail stores and services. Krebs Avenue, which lies north of the station and associated grounds, has a number of commercial firms along its north side. Pascagoula Street, a north-south street which intersects Delmas and Krebs and crosses the right-of-way, is also a commercial street for about a block and a half on both sides of the tracks. Frederick Street, which is located two blocks east of Pascagoula Street, also has a few business establishments in vicinity of the railway line. This rectangular pattern of commercial establishments surrounding railroad station constitutes the main business district. From the northeast corner of the rectangle an alignment of business concerns occupies portions of the frontage on Pascagoula Street and continues on U. S. 90 (Telephone Road) for several blocks in the direction of Moss Point to a point beyond the corporate limits.

It is estimated that this alignment and the main business district contain between 80 and 90 per cent of all land in commercial use in the town. The remaining 10 to 20 per cent is com-

prised of neighborhood stores and other types of commercial firms scattered through the residential sections of town.

Delmas Avenue is the main business street and retail core of the community. Although not all lots are in commercial use, all outlets are either retail shops or services, including the two banks, clothing stores, jewelers, Woolworth's and such other stores as normally in small towns are localized near the heart of the retail section. That Delmas Avenue has always been more important than Krebs Avenue is apparently due to the combined effect of the following four factors: (1) Delmas Avenue is on the station-side of the right-of-way, whereas Krebs Avenue faces the freight house and switchyard that occupy land north of the main-line. The importance of this distinction in the first years of the community, when the railroad was the prime means of transportation and basic reason for settlement, is readily apparent. (2) The county courthouse was placed on Delmas Avenue at the corner of Kerr Street shortly after the railroad was built. (3) Delmas Avenue lies between the railroad and the areal and population centers of the community. This point was more important in the beginning, when the main built-up area was along the beach in South Pascagoula, than it is now. (4) It has been possible to use both sides of Delmas Avenue for business establishments--a factor that tends to support a concentration of shoppers and thus enhances the value of the street for store sites.

The commercial buildings, which are primarily one story brick structures, are more concentrated toward the east end of Delmas Avenue than they are toward the west end. This arrangement appears to be due essentially to the nature of the traffic pattern. Pascagoula Street is the main artery of local traffic and route by which the majority of rural shoppers reach Delmas Avenue regardless of from whence they come. The portion of Delmas Avenue near Pascagoula Street is, therefore, obviously a more desirable business site than the east portion of the Avenue which dead ends at the river. Nearness to the river, the dead end aspect, as well as absence of traffic, depreciate the east end of the avenue as a place for business firms, and much of the space is vacant. It appears that the automobile and concentration of traffic on Pascagoula Street is slowly effecting a reorientation of the commercial pattern by drawing establishments toward the east end of Delmas Avenue and by encouraging use of adjoining Pas-

cagoula Street for business sites. Not many new buildings have been erected in the business section in the past two decades, but those that have are on Pascagoula Street near the intersection with Delmas Avenue. To some extent, the reorientation is also due to street size. Delmas Avenue is a narrow easement with narrow sidewalks and sufficient space for only one row of cars parked parallel to the curb. This is a hindrance of some magnitude both to the merchants and to the customers as a very high proportion of the latter arrive by automobile. Pascagoula Street is about twice as wide as Delmas Avenue and admits much freer movement of automobile and pedestrian traffic.

The alignment of commercial firms on Telephone Road is a recent development in response to tourist traffic on U. S. 90 and the fact that it is the principal route into Pascagoula for rural traffic from the north and the east. At the southwest end of the alignment for a distance of about two blocks nearly all the commercial use consists of service stations. Farther out Telephone Road, three tourist courts, three grocery stores, two lumber yards and a few roadside inns, are the main representatives of business firms. Most of these establishments capitalize upon foreign traffic; some do not. The lumber yards demand much space which is available here at a reasonable price. The groceries are essentially neighborhood stores that would probably be present if the road carried only a moderate amount of traffic.

The tourist courts on U. S. 90 fit into Pascagoula's commercial economy and pattern in much the same way as the courts in Bay St. Louis (Chapter II). They are medium size, inexpensive establishments built in the late 1930's to take advantage of transient trade. Briggs Tourist Court, the only other one in town, is quite different mainly because of its location on the beach. It was built in 1939 and 1940 with a view to attracting vacationists as well as transient tourists and partially to supply a pressing demand for good commercial accommodations.¹ To meet these objectives the cabins are of most modern design and as fully and conveniently equipped as the better quality courts in the vicinity of Gulfport or Biloxi. In late 1940 much of the space, which consists of 26 single units, was being used equally by transients

¹In 1939 Pascagoula had only one small third-rate hotel on Delmas Avenue.

and by officials of the shipyard on a semi-permanent basis. It is too early to judge whether the courts can attract a vacation trade. Handicaps for a vacation trade confronting the establishment are twofold: (1) Pascagoula is not a resort town and is poorly supplied with restaurants, for example, and (2) the beach site is not on the main tourist-traveled route. These factors plus an inability to procure beach property at a reasonable rate are the principal reasons offered to explain why no courts were built along the Sound before 1939. All beach property is in private hands and although about 43 per cent¹ is vacant, property owners, many of whom are nonresidents, refused to sell preferring to wait for improved demand or to hold the lots for their own use.

Since the shipyard opened flooding the town with a large number of laborers a marked deficit in rooming-house space has existed. To capitalize upon this demand three other residential facilities have been opened by private investors. A small frame hotel and trailer camp are located side by side on Pascagoula Street east of the shipyard, and, an unused ferry boat, docked in the river a few blocks north of the shipyard, has been reconditioned and placed in use as a rooming-house. Thus counting Briggs Court, Pascagoula's commercial residential accommodations have been more than doubled since 1939.

Wholesale establishments.—As indicated earlier wholesale activities in this Section of the Sound are confined to Pascagoula. Three types of goods are handled in bulk quantities, namely, groceries, oil and gas, and beverages. All the beverage and some of the oil and gas dealers are primarily retail concerns and are not designated as wholesale establishments on Figure 8. The wholesalers shown on Figure 8 are either grocery distributors or large gas distributors that have no retail function. The pattern of distribution, as might be expected, reveals a close association with the rail lines, but it is not confined to a particular segment of the right-of-ways as it is in Bay St. Louis, for example (Chapter II). Three firms are situated near the west end of Krebs Avenue; two are near the Louisville and Nashville line, east of Pascagoula Street; and two are on the Mississippi Export line farther north at points where the railroad and U. S. 90 intersect.

In general Pascagoula's position in the framework of

¹Computed from MS maps. See Table 8.

wholesale distribution along the Sound is similar to that of Bay St. Louis. Both are intermediate locations between very large wholesale centers (Mobile and New Orleans) and a minor wholesale center (Gulfport). Consequently, their wholesaling is limited to dealers in the most common types of consumer goods. That Pascagoula has more wholesale concerns than Bay St. Louis is undoubtedly due to the fact that it is farther from Gulfport and a good point from which to serve the majority of Jackson and part of George counties.

Moss Point

Land in commercial use in Moss Point consists of (1) the main retail section at the intersection of Main Street and McInnis Avenue, (2) a small collection of shops and service establishments just outside the corporate limits at Kreole, and (3) a poorly defined alignment of commercial firms along south Main Street in the direction of Pascagoula.

The main retail section is located at the point of convergence for through traffic and all local traffic. U. S. 90 from Mobile enters the intersection on McInnis Avenue and turns south on Main Street toward Pascagoula. State route 63, from the agricultural communities in the northern part of Jackson County, enters town on north Main Street. Two streets that lead from the residential area west of Rhodes Bayou also focus near the highway intersection. Thus the locality of the intersection is easily accessible from all quarters of the community and the most ideal location for commercial shops and services.

The closely built character of the shopping section is due to the fact that the shops can be located only on the three streets that intersect and the closer to the intersection the better for consumer convenience.

Although the shopping center is small, a sharp cleavage exists in location of types of business. The outlets on McInnis Avenue (U. S. 90) are primarily service stations and the automotive groups that serve the traveling public, whereas the retail establishments such as two banks, three clothiers, grocery, drug, shoe, hardware, and variety stores are located along Main Street. Because Main Street, north of the intersection, is narrow and because no side streets exist that might be used for parking space,

three lots in the business district are used for parking, a feature that is fairly uncommon in small towns.

Land in commercial use at Kreole is occupied exclusively by eating and drinking establishments, service stations, and grocery stores which serve paper mill employees, transient trade, and local residents.

With exception of a plumbing and heating firm, the scattered alignment of commercial outlets along south Main Street are mostly small neighborhood stores. The highway is the backbone of the residential pattern and as such affords greater accessibility to the residents of the immediate vicinity. Most of these stores do little business with transients or shoppers from other parts of town, but a highway location admits that possibility.

Land in Residential Use

Residential land in the Moss Point-Pascagoula Section differs from residential land in other towns along the Sound in two significant ways, namely, the fractured and discontinuous character of the pattern and the high proportion of poor grade dwellings (Fig. 8).

The essential features of the pattern already have been suggested at the beginning of the chapter in conjunction with the consideration of the gross urban pattern. They are: (1) nodal development in vicinity of the commercial core of both towns; (2) alignment along the beach in Pascagoula; (3) concentrations in the neighborhood of the leading industrial sites--Ingalls and Southern Kraft; (4) alignments along the principal streets and highways between the towns and within the towns; (5) gaps in the pattern resulting from adjustment to the drainage system; and (6) four tracts in southeastern Pascagoula recently brought into use as a housing project.

The paucity of high grade and predominance of low grade dwellings among the occupance units that constitute the pattern is stressed in the following consideration of distributive aspects of the five classes of residential properties.

Class I

Pascagoula has only about a dozen large, well-kept dwellings of the sort so common to the beach in other towns facing the

Sound. Moss Point has none. As shown on Figure 8 these residences occupy two small segments of the beach, or about 10 per cent of all land along the beach, two sites on the river facing Grant Lake, and two parcels in northern Pascagoula near the river. These houses are all old and some of those on the beach are summer homes owned by nonresidents. The sites are good residential locations but no better than many other locations on the beach or along the river. That Class I homes are not more numerous may be attributed to the fact that neither community has ever supported many wealthy families, and that metropolitan demand for beach property is limited to Mobile; and in recent years most Mobilians have sought the Alabama shore resorts.

Class II

Class II residences are much more common than Class I types. About 17 per cent of the beach front is occupied by this class, and other parcels in Pascagoula are found in the same localities as Class I dwellings. Moss Point has three widely separated groups of houses in this category. The one located on the paper mill property is comprised of large well preserved duplexes built in 1910 for employees when no housing was available in the east end of town. The other two areas are the best dwellings in town owned by local merchants. It should be noted that no residential land faces the Escatawpa and Pascagoula flood plains in Moss Point. This is due to the fact that (1) all the best river sites were originally used for sawmills; (2) the bank of the Escatawpa does not offer a particularly attractive vista; and (3) most of the river bank areas are far removed from the shopping center or schools and, therefore, do not appeal to the bulk of the townsmen. In 1940 the promontory projecting into Beardslee Lake was subdivided for residential use. Although the site is excellent and accessible, lack of demand will probably mean slow development. Altogether only about ten per cent of all residential land in Moss Point and Pascagoula is sufficiently well improved to be designated as above the average for residential land in all towns along the Sound. This is a marked contrast to Pass Christian, for example, where nearly 40 per cent of all residences are above average in size and condition of upkeep.

Class III

Class III dwellings are very widely scattered. The sites vary from superior beach locations, where they occupy 16 per cent of the total frontage, to the most ordinary locations that possess few characteristics upon which to recommend them for residential use. The majority of the dwellings near the commercial cores are in this category. Generally speaking Class III residences are interspersed with Class IV types, and in many instances not far removed from Class V dwellings. Close spatial association between Class III and Class V residences is well illustrated in the case of Jackson Avenue and Jackson Street in east central Pascagoula, and at Dantzler Street and adjoining area in northwest Moss Point. Both of these subdivisions were planned with one street for whites and one for Negroes so that a supply of domestics would be handy.

Although the residences in the housing project (Fig. 8) are smaller than the average Class III dwelling, they are new and much superior to the average Class IV dwelling, consequently they designated as Class III. The housing project, which was begun in late 1940, occupies four tracts of land in southeastern Pascagoula that total 207 acres.

The tracts chosen for this project were selected because they were all unused and therefore cheap, and all are within reasonable distance of the shipyard. The 20-acre tract that extends east from Jackson Street was selected for Negro residences; Jackson Street, as we have noted, being a Negro quarter. Altogether the four tracts contain 593 dwelling units in duplex and single-family houses with a total of 1,400 bedrooms.¹ The capacity of the project is, therefore, about 3,000, or half of the population of Pascagoula in 1940. This means that 200 acres of completely built-up land will house about a third of the town's inhabitants, or that, with a population density of 15 persons per acre, the entire town could be housed in less than a square mile. Besides houses the project also provides space for a playground and recreation center.

A major part of the \$2,000,000 cost of the development was

¹Information from resident engineer, U. S. Navy, Bureau of Yards and Docks.

spent to improve drainage and provide a sewerage system. Artificial drainage is required because the tracts are nearly flat, near to sea level, and have clayey soil and subsoils that drain slowly. The sewerage system is an improvement not found in any other part of either town--residences and commercial establishments alike depending upon septic tanks for refuse disposal.

Class IV

Class IV dwellings are also widely distributed in both municipalities although they are relatively more common in Moss Point than in Pascagoula. A majority of the dwellings in Kreole and adjacent parts of Moss Point, which house employees of the paper mill, are designated as Class IV. In Pascagoula a large area east and north of Ingalls shipyard is occupied by this type of residence, which, it will be recalled, is below average size and not in good repair. The dwellings near the shipyard were built, many of them, during World War I when International Shipyard was functioning. The subdivision that joins the northeast corner of the shipyard is known as International subdivision.

Class V

For the Moss Point-Pascagoula urban area as a whole, Class V residences are about as numerous and almost as widespread as either Classes III or IV. However, they are relatively more numerous in Moss Point and the unincorporated zone than they are in Pascagoula.¹ This unbalanced distribution is due in part to the fact that Negroes represent 37 per cent of the population in Moss Point and only 17 per cent in Pascagoula (Table 4). The common characteristic of all low grade residential areas is location away from the water fronts or toward the inland side of both towns. Thus in Pascagoula the bulk of substandard dwellings

¹In 1940, of the dwelling units reporting (over 90 per cent in both towns), 75 per cent in Moss Point were in need of major repairs or had no private bath as compared to 60 per cent for Pascagoula. The average for all urban communities in the State is 63.4 per cent and for Long Beach, which represents the opposite extreme, 30.0 per cent. Moss Point's houses are of poorest caliber and in worse repair than those of any other town along the Sound. Only a third have baths and 55 per cent need major repairs. The average dwelling unit rental is also lower than in any other town along the Sound. (See Table 11.)

are east of Pascagoula Street either in the district north of the Louisville and Nashville tracks or near the center of the corporate area, and in Moss Point they are nearly all south of a line drawn through the long axis of the incorporated area.

Land in Communal Use

Land in communal use in this Section is nearly all confined to the incorporated areas and most of it is in Pascagoula. Space occupied by governmental functions is very small in Moss Point and consists of one small lot on McInnis Avenue in the commercial section which is the combined city hall and fire station on one side and the city waterworks with its elevated storage tank on the other side. The post office is operated in conjunction with a store outlet on Main Street in the middle of the retail section. At Pascagoula all governmental functions are on Delmas Avenue. The combination fire station and city hall is a very small edifice, whereas the county courthouse occupies about a fourth of a city block. A new post office building is at the head of Delmas Avenue on the east side of Pascagoula Street.

Land used for schools and churches represents a very small fraction of total urban land. In Pascagoula the largest single use parcel on the west side of Pascagoula Street is occupied by the new high school. The old high school building farther south is now used for elementary and junior high classes. This plot also contains the athletic field. A parochial school is located south of Delmas Street. The schools are well located with respect to the population pattern, but all are overcrowded. Even the new high school is deemed inadequate to serve the throng of students arriving as a result of the shipyard activities.

In Moss Point the schools are also well located. The high school is on Welch Street approximately at the demographic center of the town, and grade schools are maintained in the eastern and western ends of town. The Negro grade and high school is also in the west end of town, and fairly well centered in relation to the distribution of Negro population (cf. distribution of Class V residences).

Churches are numerous and very widely scattered. As elsewhere along the Sound the number is principally expression of the bi-racial composition of the population. Pascagoula, for example, has nine churches for whites and six for Negroes, despite the fact

only 17 per cent of the population is Negro.

Six cemeteries to serve a population of about 10,000 is likewise a response to the racial and religious composition of population, as well as the fact that the towns were, at the time the cemeteries were laid out, two completely separate communities.

A new cemetery and the county hospital represent the only examples of land in communal use in the unincorporated inter-urban zone. Both are expressions of a desire to have such facilities centrally located with regard to the population pattern of the greater urban area.

As county seat and largest town in the county, Pascagoula is the logical location for the county fair grounds which is situated in the northern part of town between the right-of-way of the Mississippi Export Railroad and U. S. 90.

Land in recreational use is almost all in Pascagoula, and, on account of the golf course, occupies much more space than land in institutional use. The nine-hole municipal golf course is used exclusively by local residents, but it is not very popular as it is not in good condition. Except for Biloxi, Pascagoula is the only town along the Sound where municipally-owned land is set aside for such a purpose.

Two portions of the beach are utilized for community benefit. The park at the west end of the shore is unimproved and not intensively used, but the city pavilion farther east, which includes a dance hall, restaurant, and pier, is a favorite recreational center for residents of both communities. The park facing Krebs Lake contains the original Fort Pascagoula and first habitation in the area. As such it is a historical monument and not a place for recreation.

Moss Point has no park space and the recreational facilities are confined to the athletic field and school playgrounds. In the east end of town one large tract on U. S. 90 is used as a baseball field for paper mill employees and residents of Kreole.

Both towns support community houses where civic and social gatherings are held and Pascagoula has an Elks Club.

The fact that this Section of the Sound is an industrial area with little or no emphasis on the tourist industry does not appear to have any bearing upon the amount of space employed for recreational purposes. Whether land has high recreational value appears to be much more important. Thus in Moss Point all the

river frontage has a certain amount of recreational value, but no part is particularly outstanding; consequently none of it is utilized as a public park. The beach in Pascagoula, on the other hand, is valuable because it is exceptional. No comparable strip of shore exists for 15 miles in either direction along the Sound. Hence it is prized by residents of both towns, and from point of community welfare is better used for park than it is for residential purposes.

APPENDIX

TABLE 8

POPULATION OF MISSISSIPPI COAST TOWNS, 1870-1940^a

Town	Year							
	1870	1880	1890	1900	1910	1920	1930	1940
Waveland....	.....	.....	328	520	554	431	663	767
Bay St. L. ...	.....	1,978	1,974	2,872	3,388	3,033	3,724	4,138
Pass C.	1,951	1,410	1,705	2,028	2,458	2,357	3,004	3,338
Gulfport....	.....	.....	.....	1,060	6,386	8,157	12,574	15,195
L. Beach....	.....	.....	.....	.....	1,026	980	1,346	1,495
Biloxi.....	954	1,540	3,234	5,467	8,049	10,937	14,850	17,475
O. Springs...	.....	.....	1,148	1,255	1,472	1,732	1,663	1,881
P'goula....	.....	.....	.....	.....	3,379	6,082	4,339	5,900
M. Point....	.....	.....	.....	.....	3,054	3,340	2,453	3,042
Total..	2,905	4,828	8,389	13,202	29,766	37,049	44,416	53,232

^aSixteenth Census of the United States: 1940. Population, Vol. I (Washington: Government Printing Office, 1942), p. 571, and earlier census volumes.

TABLE 9

RELATION OF BEACH FRONTAGE IN MAJOR LAND USES
TO TOTAL BEACH FRONTAGE, BY TOWNS^a

Town	Percentage				
	Residential	Communal	Commercial	Vacant	Total
Waveland.....	85.7	3.2	....	11.1	100
Bay St. Louis ^b ...	61.5	9.4	6.2	22.9	100
Pass Christian...	64.0	3.8	7.0	25.2	100
Long Beach.....	57.4	4.4	8.2	30.0	100
Gulfport.....	56.2	16.1	7.5	15.1	94.9 ^c
Miss. City..... ^d	35.0	11.0	18.0	36.0	100
Inter-urban Zone ^e	31.9	17.8	15.3	35.0	100
Biloxi ^f	60.4	11.4	17.2	11.0	100
Ocean Springs ^g ...	26.8	....	3.6	69.6	100
Pascagoula.....	45.0	10.5	1.5	43.0	100

^aCalculated from MS maps. Space occupied by streets omitted.

^bIncludes both Bay and Sound margins.

^c5.1 per cent of beach occupied by port facilities.

^dFrom De Buys Street to Biloxi (Fig. 6).

^eIncludes only the frontage west of Oak Street.

^fSound frontage only (from highway bridge southeastward).

TABLE 10

RELATION OF BEACH FRONTAGE IN EACH RESIDENTIAL CLASS
TO TOTAL BEACH RESIDENTIAL FRONTAGE, BY TOWNS^a

Town	Percentage				
	Class I	Class II	Class III	Class IV	Total
Waveland..... ^b	23.0	47.2	29.0	0.9	100
Bay St. Louis.....	14.5	42.3	41.0	2.2	100
Pass Christian.....	40.8	43.5	15.4	0.3	100
Long Beach.....	3.9	43.5	48.9	3.8	100
Gulfport.....	34.6	41.6	23.9	....	100
Miss. City.....	40.0	22.8	36.6	0.6	100
Inter-urban Zone ^c ..	19.0	56.0	25.0	....	100
Biloxi.....	44.0	52.0	4.0	....	100
Ocean Springs ^d.....	....	58.2	41.8	....	100
Pascagoula.....	22.4	38.2	37.1	2.3	100

^aData calculated from MS maps made by author.

^bIncludes both Bay and Sound margins.

^cFrom De Buys Street to Biloxi (Fig. 6).

^dSound frontage only (from highway bridge southeastward).

TABLE 11

SELECTED CHARACTERISTICS OF HOUSING FOR EIGHT TOWNS
ALONG MISSISSIPPI SOUND, 1940^a

	Biloxi	Gulfport	Pascagoula	Bay St. Louis	Pass Christian	Moss Point	Ocean Springs	Long Beach
Ratio of D.U. ^b to total structures	1.21	1.18	1.19	1.05	1.06	1.09	1.10	1.03
% D. U. owner- occupied	37	42	48	47	45	53	43	47
% D. U. vacant, not for rent or sale	0.8	0.3	1.1	8.3	12.9	0.1	3.1	8.4
% D. U. vacant, for rent or sale	7.9	2.3	1.5	9.2	6.9	2.4	6.0	6.9
% of D. U. in need of major repairs ^c	29	15	24	28	18	55	25	13
% of D. U. with no private bath ^c	48	45	43	56	54	68	43	27
% of occupied D.U. with more than 1.51 per- sons per room	14	11	17	10	14	14	11	6
Average month- ly rental (dol- lars)	14.4	17.2	16.6	16.5	15.7	10.5	12.7	20.8
% of total D. U. that are rural-farm D. U.	0.0	0.0	0.0	0.0	0.0	0.0	2.4	7.3

^aSource: Sixteenth Census of the United States: 1940.
Housing, Vol. I, Pt. 1 (Washington: Government Printing Office),
pp. 787-88.

^bDwelling Units.

^cComputed as percentage of D. U. reporting which is about
85 to 95 per cent of total D. U.

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